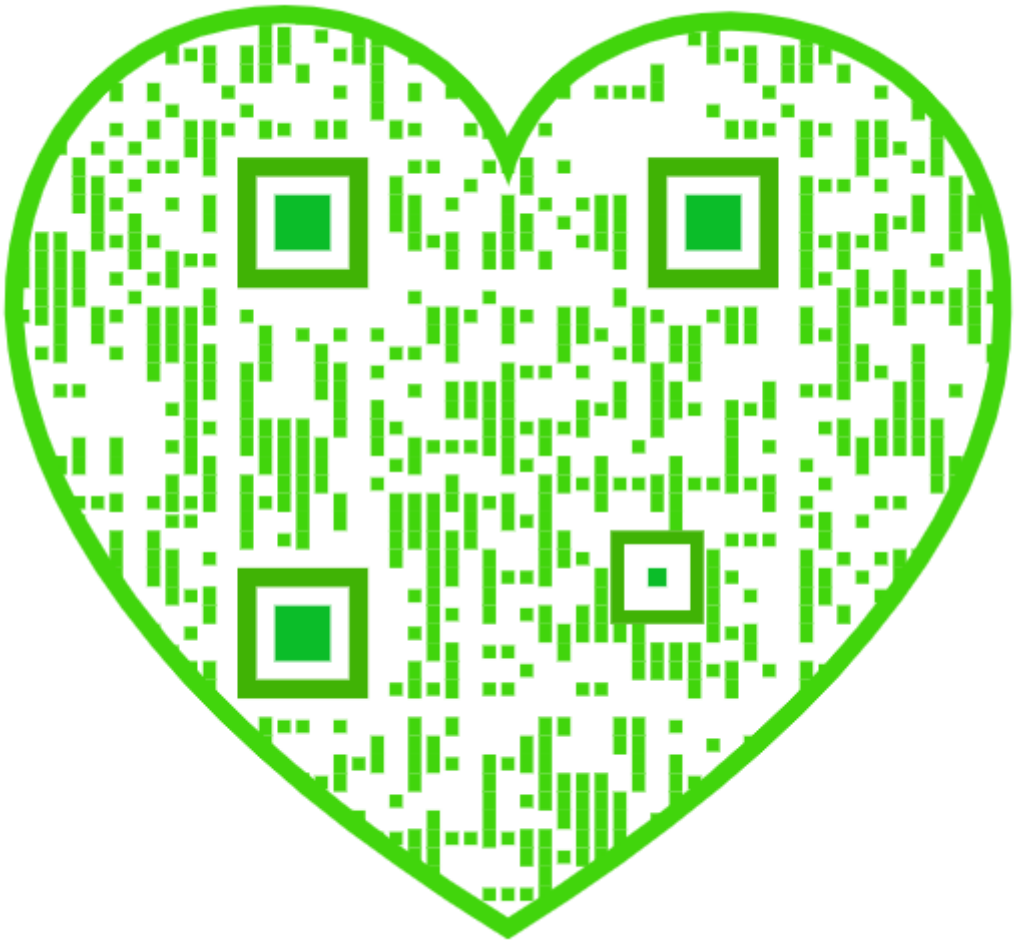


TRANSACTIONS

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

VOL. XIII.

FOR THE YEAR 1900.

PHILADELPHIA:
WM. J. DORNAN, PRINTER.
1901.

BOSTON MEDICAL
JUN 20 1901
LIBRARY.

2352

COPYRIGHT, 1901,

BY THE

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

All rights reserved.

CATALOGUED
JUN 20 1901
E. H. B.

NOTE.

THE Association does not hold itself responsible for the views enunciated in the papers and discussions published in this volume.

WILLIAM WARREN POTTER, *Secretary*,
284 FRANKLIN STREET, BUFFALO.

[MINUTES and discussions stenographically reported by WILLIAM WHITFORD, Chicago, Ill.]

LIST OF ILLUSTRATIONS.

PAGE

Case of Composite Teratoma of Ovary. (W. E. B. DAVIS.) *facing* 36

Surgical Treatment of Uterine Displacements. (CHARLES A. L. REED.)

Figs. 1–4 . . . . . *facing* 141

Figs. 5 and 6 . . . . . *facing* 142

Fibroma of the Ovary. (L. H. LAIDLEY.) Figs. 1–3 . *facing* 152

Papilloma of the Vulva. (EDWARD J. ILL.) Colored plate and figure . . . . . *facing* 158

Hernia or Diverticulum of Chorion. (L. H. LAIDLEY.) . . . 162

Some Contraindications to Intraperitoneal Use of Normal Salt Solution after Abdominal Section. (FRANK F. SIMPSON.) Figs. 1–4 . 223

Round Ligament Ventrosuspension of the Uterus. (D. TOD GILLIAM.) Figs. 1–4 279

Portrait of Melancthon Storrs . . . . . *facing* 329

CONTENTS.

PAGE

Constitution ix
By-laws xi
Officers for 1900–1901 xv
List of Honorary Fellows xvii
List of Corresponding Fellows xxi
List of Ordinary Fellows xxiii
Minutes of the Thirteenth Annual Meeting xxxvii
President's Address. The Education of the Laity Upon Sexual Matters: When shall they be Taught, and to what Extent? By RUFUS B. HALL, M.D. 3
Erroneous Objections to Bilateral Inguinal Celiotomy and Shortening of the Round Ligaments *via* the Dilated Internal Inguinal Rings, and its Superior Ultimate Results in Simple and Complicated Aseptic Retroversions of the Uterus. By A. GOLDSPHON, M.D. . 11
A Case of Composite Teratoma of the Ovary. By W. E. B. DAVIS, M.D. 36
The Treatment of Chronic Cystitis in the Female by Curetment of the Bladder and Instillations of Corrosive Sublimate. By CHARLES GREENE CUMSTON, M.D. 40
Notes on Four Cases of Perforated Gastric Ulcer, with Remarks. By HENRY HOWITT, M.D. 63
Some Points Regarding Surgery of the Gall-bladder. By A. VANDER VEER, M.D. 88
The Diagnosis of Ectopic Pregnancy before Rupture, Based on Eleven Cases. By J. F. BALDWIN, M.D. 121
A Contribution to the Surgical Treatment of Uterine Displacements. By CHARLES A. L. REED, M.D. 138
Fibroma of the Ovary. By L. H. LAIDLEY, M.D. 152
Papilloma of the Vulva, with Specimens. By EDWARD J. ILL, M.D. 158
Exhibition of Pathologic Specimens, with Brief Histories Thereof, and Discussion on the Same 161
Hernia or Diverticulum of the Chorion. By L. H. LAIDLEY, M.D. 161
Carcinoma of the Cecum. By CHARLES GREENE CUMSTON, M.D. 163
Ovarian Cyst Complicated by Retroperitoneal Fibroma. By RUFUS B. HALL, M.D. 165
Inverted Uterus. By ORANGE G. PFAFF, M.D. 167

PAGE
Private Hospitals and their Management. By JOSEPH PRICE, M.D. 171
Postrectal or Presacral Growths. By JAMES F. W. ROSS, M.D. . 192
The Ligature and Value of Dry Sterilized Catgut. By J. H. CARSTENS, M.D. 209
Some Contraindications to Intraperitoneal Use of Normal Salt Solution after Abdominal Section. By FRANK F. SIMPSON, M.D. . 219
Simple Methods in Pelvic Surgery. By JOHN B. DEAVER, M.D. . 231
The Treatment of Fibroids in the Non-pregnant Uterus. By E. F. FISH, M.D. 244
Acute Senile Endometritis. By L. H. DUNNING, M.D. 253
Tubo-ovarian Abscess and How Best to Deal with It. By EDWIN RICKETTS, M.D. 264
Round Ligament Ventrosuspension of the Uterus. By D. TOD GILLIAM, M.D. 277
Observations Respecting Malignant Disease of the Pelvic Organs. By AUGUSTUS P. CLARKE, M.D. 292
Difficult and Obscure Pus Cases in Pelvic Surgery in Women. By WALTER B. CHASE, M.D. 299
Treatment of Cholelithiasis. By HERMAN E. HAYD, M.D. . . 309
Pelvic Suppurations. By JOSEPH PRICE, M.D. 316
Jaundice Following Abdominal Section. By HENRY D. INGRAHAM, M.D. 323
In Memoriam. Melancthon Storrs, M.D. By WILLIAM WARREN POTTER, M.D. 329

CONSTITUTION AND BY-LAWS

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS,

TOGETHER WITH

MINUTES OF THE THIRTEENTH ANNUAL MEETING.

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

CONSTITUTION.

I. The name of this Association shall be THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

II. Its object shall be the cultivation and promotion of knowledge in whatever relates to Abdominal Surgery, Obstetrics, and Gynecology.

MEMBERS.

III. The members of this Association shall consist of Ordinary Fellows, Honorary Fellows, and Corresponding Fellows.

The Ordinary Fellows shall not exceed one hundred and twenty-five in number.

The Honorary Fellows shall not exceed ten American and twenty-five foreign.

Candidates shall be proposed to the Executive Council at least one month before the first day of meeting by two Fellows, and shall be balloted for at the annual meeting, a list of names having been sent to every Fellow with the notification of the meeting.

A two-thirds vote in the affirmative of all the members present shall be necessary to elect—fifteen Fellows at least being in attendance.

All candidates for active fellowship shall submit to the Executive Council, at least one month before the annual meeting, an original paper relating to Abdominal Surgery, Obstetrics, or Gynecology.

HONORARY FELLOWS.

IV. The power of nominating Honorary Fellows shall be vested in the Executive Council.

Their election shall take place in the same manner as that of Ordinary Fellows.

They shall enjoy all the privileges of Ordinary Fellows, excepting to vote or hold office, but shall not be required to pay any fee.

CORRESPONDING FELLOWS.

V. The Corresponding Fellows shall be recommended by the Executive Council and elected by the Association.

They shall enjoy all the privileges of Ordinary Fellows, excepting to vote or hold office, and shall be entitled to a copy of the annual *Transactions*.

They shall pay an annual fee of five dollars.

OFFICERS.

VI. The officers of this Association shall be a President, two Vice-presidents, a Secretary, a Treasurer, and six Executive Councillors.

The nomination of all officers shall be made in open session at the business meeting, and the election shall be by ballot.

The first five officers shall enter upon their duties immediately before the adjournment of the meeting at which they shall be elected, and shall hold office for one year.

["At the election next succeeding the adoption of these laws, the full number of Executive Councillors shall be elected; two for a term of three years, two for a term of two years, and two for a term of one year.

"At every subsequent election two Councillors shall be elected for a term of three years, and shall continue in office until their successors shall have been elected and shall have qualified."][1]

Any vacancy occurring during the recess may be filled temporarily by the Executive Council.

ANNUAL MEETINGS.

VII. The time and place of holding the annual meeting shall be determined by the Association or may be committed to the Executive Council each time before adjournment.

It shall continue for three days, unless otherwise ordered by vote of the Association.

AMENDMENTS.

VIII. This Constitution may be amended by a two-thirds vote of all the Fellows present at the annual meeting: *provided*, that notice of the proposed amendment shall have been given in writing at the annual meeting next preceding: and *provided, further*, that such notice shall have been printed in the notification of the meeting at which the vote is to be taken.

[1] Amendment adopted September 21, 1898.

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

BY-LAWS.

THE PRESIDING OFFICER.

I. The President, or in his absence one of the Vice-presidents, shall preside at all meetings, and perform such other duties as ordinarily pertain to the Chair.

The presiding officer shall be *ex-officio* chairman of the Executive Council, but shall vote therein only in case of a tie.

SECRETARY.

II. The Secretary shall attend and keep a record of all meetings of the Association and of the Executive Council, of which latter he shall be *ex-officio* clerk, and shall be entitled to vote therein.

He shall collect all moneys due from the members, and shall pay the same over to the Treasurer, taking his receipt therefor.

He shall supervise and conduct all correspondence of the Association; he shall superintend the publication of the *Transactions* under the direction of the Executive Council, and shall perform all the ordinary duties of his office.

He shall be the custodian of the seal, books, and records of the Association.

TREASURER.

III. The Treasurer shall receive all moneys from the Secretary, pay all bills, and render an account thereof at the annual meetings, when an Auditing Committee shall be appointed to examine his accounts and vouchers.

EXECUTIVE COUNCIL.

IV. The Executive Council shall meet as often as the interests of the Association may require. The President, or any three members, may call a meeting, and a majority shall constitute a quorum.

It shall have the management of the affairs of the Association, subject to the action of the house at its annual meetings.

It shall have control of the publications of the Association, with full power to accept or reject papers or discussions.

It shall have control of the arrangements for the annual meetings, and shall determine the order of the reading of papers.

It shall constitute a court of inquiry for the investigation of all charges against members for offences involving law or honor; and it shall have the sole power of moving the expulsion of any Fellow.

ORDER OF BUSINESS.

V. The Order of Business at the annual meetings of the Association shall be as follows:

1. General meeting at 10 o'clock A.M.
   a. Reports of Committees on Scientific Questions.
   b. Reading of Papers and Discussion of the same.
2. One Business Meeting shall be held at half-past nine o'clock A.M. on the first day of the session, and another on the evening of the second day (unless otherwise ordered by vote), at which only the Fellows of the Association shall be present. At these meetings the Secretary's Record shall be read; the Treasurer's Accounts submitted; the Reports of Committees on other than scientific subjects offered; and all Miscellaneous Business transacted.

PAPERS.

VI. The titles of all papers to be read at any annual meeting shall be furnished to the Secretary *not later* than one month before the first day of the meeting.

No paper shall be read before the Association that has already been published, or that has been read before any other body.

Not more than thirty minutes shall be occupied in reading any paper before the Association.

Abstracts of all papers read should be furnished to the Secretary at the meeting.

All papers read before the Association shall become its sole property if accepted for publication; and the Executive Council may decline

to publish any paper not handed to the Secretary *complete* before the final adjourment of the annual meeting.

QUORUM.

VII. The Fellows present shall constitute a quorum for all business, excepting the admission of new Fellows or acting upon amendments to the Constitution, when not less than fifteen Fellows must be present.

DECORUM.

VIII. No remarks reflecting upon the personal or professional character of any Fellow shall be in order at any meeting, except when introduced by the Executive Council.

FINANCE.

IX. Each Fellow on admission shall pay an initiation fee of twenty-five dollars, which shall include his dues for the first year.

Every Fellow shall pay *in advance* (*i. e.*, at the beginning of each fiscal year) the sum of twenty dollars annually thereafter.

[A fiscal year includes the period of time between the first day of one annual meeting and the first day of the next.]

Any Fellow neglecting to pay his annual dues for two years may forfeit his membership, upon vote of the Executive Council.

The Secretary shall receive annually a draft from the President drawn on the Treasurer for a sum, to be fixed by the Executive Council, for the services he shall have rendered the Association during the year.

A contingent fund of one hundred dollars shall be placed annually at the disposal of the Secretary for current expenses, to be disbursed by him, and for which he shall present proper vouchers.

ATTENDANCE.

X. Any Fellow who shall neither attend nor present a paper for three consecutive years, unless he offer a satisfactory excuse, may be dropped from fellowship upon vote of the Executive Council.

RULES.

XI. *Robert's Rules of Order* shall be accepted as a parliamentary guide in the deliberations of the Association.

AMENDMENTS.

XII. These By-laws may be amended by a two-thirds vote of the Fellows present at any meeting; *provided*, previous notice in writing shall have been given at the annual meeting next preceding the one at which the vote is to be taken.

OFFICERS FOR 1900-1901.

PRESIDENT.

WILLIAM E. B. DAVIS, Birmingham.

VICE-PRESIDENTS.

EDWIN WALKER, Evansville.
ALBERT GOLDSPOHN, Chicago.

SECRETARY.

WILLIAM WARREN POTTER, Buffalo.

TREASURER.

XAVIER OSWALD WERDER, Pittsburg.

EXECUTIVE COUNCIL.

LEHMAN HERBERT DUNNING, Indianapolis.
WALTER BENAJAH CHASE, New York.
ALBERT VANDER VEER, Albany.
LEWIS SAMUEL McMURTRY, Louisville.
EDWARD JOSEPH ILL, Newark.
EDWIN RICKETTS, Cincinnati.

HONORARY FELLOWS.

* Deceased.

1889.—BANTOCK, GEORGE GRANVILLE, M.D., F.R.C.S. Ed. Surgeon to the Samaritan Free Hospital. 12 Granville Place, Portman Square, W., London, England.

1899.—BALLANTYNE, JOHN WILLIAM, M.D., F.R.C.P.E., F.R.S. Edin. Lecturer on Midwifery and Gynecology, School of the Royal College, Edinburgh; Examiner in Midwifery and Gynecology in the University of Aberdeen; Vice-President of the Edinburgh Obstetrical Society; Honorary Fellow of the Glasgow Obstetrical and Gynecological Society. 24 Melville Street, Edinburgh, Scotland.

1889.—BARBOUR, A. H. FREELAND, M.A., B.S.C., M.D., F.R.C.P. Ed., F.R.S. Ed. Lecturer on Midwifery and Diseases of Women in the Edinburgh Medical School; Assistant Physician to the Royal Maternity Hospital; Assistant Physician for Diseases of Women to the Royal Infirmary; Physician to the Women's Dispensary; Fellow of the Edinburgh and London Obstetrical Societies and of the British Gynecological Society; Corresponding Fellow of the Royal Academy of Medicine, Turin. 4 Charlotte Square, Edinburgh, Scotland.

1892.—*BOISLINIÈRE, L. CH., A.B., M.D., LL.D. 1896.

1890.—CHAMPIONNIÈRE, JUST. LUCAS, M.D. 3 Avenue Montaigne, Paris, France.

1889.—*CHARPENTIER, LOUIS ARTHUR ALPHONSE, M.D. 66 Rue de Miromesnil, Paris, France. 1899.

1888.—CORDES, AUGUST ELISÉE, M.D. Member of the Royal College of Physicians, London; Fellow of the Obstetrical Society of London and of the British Gynecological Society; Corresponding National Member of the Obstetrical and Gynecological Society of Paris; Honorary Fellow of the Detroit Gynecological Society; late "Chirurgien-adjoint" of the Obstetrical and Gynecological Clinic at the Maternity at Geneva; Consulting Accoucheur of the Miséricorde

Hospital, etc.; Perpetual Member of the Société Obstétricale de France, Paris, France. 12 Rue Bellot, Geneva, Switzerland.

1890.—*Corson, Hiram, M.D. 1896.

1889.—Croom, J. Halliday, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E. Physician to and Clinical Lecturer on Diseases of Women, Royal Infirmary, Edinburgh; Physician to the Royal Maternity Hospital; Lecturer on Midwifery and the Diseases of Women at the School of Medicine; Consulting Physician for Diseases of Women, Western Dispensary. 25 Charlotte Square, Edinburgh, Scotland.

1889.—*Dunlap, Alexander, A.M., M.D. Springfield, O. 1894.

1888.—*Edis, Arthur Wellesley, M.D. Lond., F.R.C.S., M.R.S.C.S. London, England. 1893.

1889.—*Eklund, Abraham Fredrik, M.D. 3 A. Sibyllegatan, Stockholm, Sweden. 1898.

1891.—Fernandez, Juan Santos, M.D. Calle de la Reina, No. 92, Havana, Cuba.

1891.—*Fisher, George Jackson, A.M., M.D. Sing Sing, N. Y. 1893.

1889.—Freund, William Alexander, M.D. Professor and Director of the Clinic for Diseases of Women in the Emperor William University. 2 Nikolaustaden, Strasburg, Germany.

1896.—Gaston, James McFadden, A.M., M.D. Professor of Surgery in the Southern Medical College, Atlanta; Fellow of the American Surgical Association; Member of the Southern Surgical and Gynecological Association. 421 Capitol Avenue, Atlanta, Ga.

1892.—*Green, Traill, M.D., LL.D. Easton, Pa. 1897.

1894.—Jacobs, Charles, M.D. Professor of the Faculty of Medicine of Brussels; Secretary-General of the Permanent Committee of the Periodic International Congress of Gynecology and Obstetrics; Honorary President of the Belgian Society of Gynecology and Obstetrics; Honorary Fellow of the Gynecological Societies of New York and Chicago; Member of the Southern Surgical and Gynecological Association; Corresponding Member of the Gynecological Society of Paris; Surgeon to the Brussels Polyclinic. 53 Boulevard de Waterloo, Brussels, Belgium.

1889.—*Keith, Thomas, M.D. London, England. 1896.

1889.—LEOPOLD, G., M.D. Professor in the Royal Clinic for Diseases of Women. 12 Seminar-Strasse, Dresden, Germany.

1894.—MACLEAN, DONALD, M.D. President of the American Medical Association, 1894. 72 Lafayette Avenue, Detroit, Mich.

1890.—MARTIN, AUGUST, M.D. Professor of Gynecology in the University of Greifswald, Greifswald, Germany.

1895.—*MASTIN, CLAUDIUS HENRY, M.D., LL.D. Mobile, Ala. 1898.

1897.—MATHEWS, JOSEPH MCDOWELL, M.D. Professor of Diseases of the Rectum and Clinical Surgery, Hospital College of Medicine; President of the Kentucky State Board of Health; First Vice-President American Medical Association 1898; President, 1899. 923 Fourth Avenue, Louisville, Kentucky.

1891.—MOSES, GRATZ ASHE, M.D. Emeritus Professor of Obstetrics and Gynecology in the Missouri Medical College; formerly in charge of the Woman's Department, St. Louis Hospital, and Clinical Lecturer in Gynecology, St. Louis Medical College; Physician to Augusta Hospital. 3883 Washington Place, St. Louis, Mo.

1889.—NICOLAYSEN, JULIUS, M.D. Professor of Surgery in the University of Norway. Christiania, Norway.

1891.—PIETRANERA, E., M.D. Professor of Obstetrics in the Medical Department of the National University; Director of the Maternity Branch of the Clinical Hospital. 2711 Calle Rio Adaria, Buenos Ayres, Argentine Republic, S. A.

1889.—SAENGER, MAX, M.D. Professor of Obstetrics and Gynecology, University of Prague; late President of the Leipzig Obstetrical Society; Honorary Member of the Obstetrical Societies of Philadelphia and Chicago; Honorary Member of the Belgian Gynecological Society, Brussels; Honorary Member of the Gynecological Society, Kiew; Corresponding Member of the Medical Society of Christiania, Norway. Heuwaagsplatz 3, Prague, Germany.

1890.—SAVAGE, THOMAS, M.D., F.R.C.S. Eng. Surgeon to the Birmingham Hospital for Women. 33 Newhall Street, Birmingham, England.

1889.—SCHULTZE, BERNHARD SIGMUND, M.D. Professor of Gynecology; Director of the Lying-in Institute and of the Gynecological Clinic. 2 Sellierstrasse, Jena, Germany.

1896.—SEGOND, PAUL, M.D. Professor of the Faculty of Medicine Paris; Surgeon to the Salpêtrière; Principal Physician to the Orleans Railroad. 11 Quai d'Orsay, Paris.

1899.—SINCLAIR, WILLIAM JAPP, M.A., M.D. (Aberd.), M.R.C.P. Professor of Obstetrics and Gynecology, Owens College, Victoria University; Physician to the Manchester Southern Hospital for Diseases of Women and Children. 250 Oxford Road, Manchester, England.

1894.—*SLAVIANSKY, KRONID, M.D. 24 Liteinaia Street, St. Petersburg, Russia. 1898.

1888.—*SMITH, J. GREIG, M.A., C.M., M.B., F.R.S.E. Bristol, England. 1897.

1896.—STERNBERG, GEORGE MILLER, A.M., M.D., LL.D. Brigadier-General and Surgeon-General, U. S. Army. Washington, D. C.

1899.—*STORRS, MELANCTHON, A.M., M.D. (Transferred from Ordinary Fellow.) Hartford, Conn. 1900.

1888.—*TAIT, LAWSON, M.D., LL.D., F.R.C.S.E. Birmingham, England. 1899.

1900.—THORNTON, J. KNOWSLEY, M.B., M.C.I.P. Corresponding Fellow of the Boston Gynecological Society; Past President of the Medical Society of London. Haldersham Hall, Cambridge, England.

1888.—WILLIAMS, SIR JOHN, Bart., M.D., F.R.C.P. 63 Brook Street, Grosvenor Square, W., London, England.

1889.—VON WINCKEL, F., M.D. Professor of Gynecology and Director of the Royal Hospital for Women; Member of the Supreme Council and of the Faculty of Medicine in the University of Munich. 16A Sonnenstrasse, Munich, Germany.

Total, twenty-six Honorary Fellows.

CORRESPONDING FELLOWS.

1899.—BEUTTNER, OSCAR, M.D. Private-docent of the Faculty of Medicine. 2 Place de la Fasterie, Geneva, Switzerland.

1891.—GRIFFIN, HERBERT SPOHN, B.A., M.D. Surgeon to Hamilton City Hospital; Examiner in Obstetrics, University of Toronto. 157 Main Street, Hamilton, Ontario, Canada.

1891.—MACHELL, HENRY THOMAS, M.D., L.R.C.P. Ed. Lecturer on Obstetrics, Women's Medical College; Surgeon to St. John's Hospital for Women; Physician to Victoria Hospital for Sick Children and to Hillcrest Convalescent Home. 95 Bellevue Avenue, Toronto, Ontario, Canada.

1898.—WRIGHT, ADAM HENRY, B.A., M.D., Univ. Toronto, M.R.C.S. Eng. Professor of Obstetrics in the University of Toronto; Obstetrician and Gynecologist to the Toronto General Hospital and Burnside Lying-in Hospital. President, 1891. (Transferred from Ordinary List, 1898.) 30 Gerrard Street, East, Toronto, Ont., Canada.

Total, four Corresponding Fellows.

ORDINARY FELLOWS.

* Deceased. † Resigned.

1890.—ASDALE, WILLIAM JAMES, M.D. Professor of Diseases of Women, Western Pennsylvania Medical College, Medical Department University of Western Pennsylvania. 5523 Ellsworth Avenue, Pittsburg, Pa.

1895.—BACON, JOSEPH BARNES, M.D. Professor of Rectal Diseases at the Post-Graduate Medical School; Instructor in Clinical Surgery in the Medical Department of Northwestern University. 4125 Drexel Boulevard, Chicago, Ill.

Founder.—BAKER, WASHINGTON HOPKINS, M.D. Senior Obstetrician to the Maternity Hospital; Physician to the German Hospital. 1610 Summer Street, Philadelphia, Pa.

1895.—BALDWIN, JAMES FAIRCHILD, A.M., M.D. Chancellor of and Professor of Surgical Gynecology in the Ohio Medical University; Gynecologist at the Protestant Hospital. 112 North Fourth Street, Columbus, O.

1889.—BARROW, DAVID, M.D. Member of the Southern Surgical and Gynecological Association. 22 East Market Street, Lexington, Kentucky.

1892.—BLUME, FREDERICK, M.D. Gynecologist to the Allegheny General Hospital and Pittsburg Free Dispensary; Obstetrician to the Roselia Maternity Hospital; Consulting Gynecologist to the Mercy Hospital; President of the Pittsburg Obstetrical Society, 1892. 524 Penn Avenue, Pittsburg, Pa.

1900.—BONIFIELD, CHARLES LYBRAND, M.D. Professor of Clinical Gynecology in the Medical College of Ohio; President Cincinnati Academy of Medicine, 1900; Gynecologist to the Good Samaritan, Christ's, and to Speer's Memorial Hospitals; formerly President of the Cincinnati Obstetrical Society; Secretary of the Section on Obstetrics and Gynecology American Medical Association, 1901. 2142 Auburn Avenue, Cincinnati, O.

1896.—Bosher, Lewis C., M.D. Professor of the Principles of Surgery and Clinical Lecturer on Genito-urinary Surgery, Medical College of Virginia; Visiting Surgeon to the Old Dominion Hospital. 717 East Franklin Street, Richmond, Va.

Founder.—Boyd, James Peter, A.M., M.D. Professor of Obstetrics, Gynecology, and Diseases of Children in the Albany Medical College; Gynecologist to the Albany Hospital; Consulting Obstetric Surgeon to St. Peter's Hospital; Fellow of the British Gynecological Society. 152 Washington Avenue, Albany, N. Y.

1889.—Branham, Joseph H., M.D. Demonstrator of Anatomy in the College of Physicians and Surgeons; Visiting Surgeon to Bayview Hospital. 2200 Eutaw Place, cor. Ninth Avenue, Baltimore, Md.

1894.—Brown, John Young, Jr., M.D. Late First Assistant Physician in the Central Kentucky Asylum for the Insane; President Mississippi Valley Medical Association, 1898. 3556 Olive Street, St. Louis, Mo.

1889.—*Burns, Bernard, M.D. Allegheny, Pa. 1892.

1898.—Cameron, Markley Connell, M.D. Demonstrator of Gynecology, Western Pennsylvania Medical College; Assistant Physician, Western Pennsylvania Hospital. 178 Forty-third Street, Pittsburg, Pa.

Founder.—Carstens, J. Henry, M.D. Professor of Obstetrics and Clinical Gynecology in the Detroit College of Medicine; Gynecologist to the Harper Hospital; Attending Physician to the Woman's Hospital; Obstetrician to the House of Providence; President of the Detroit Gynecological Society, 1892. *Vice President*, 1888–89; *President*, 1895; *Executive Council*, 1896–98. 620 Woodward Avenue, Detroit, Mich.

1895.—Chase, Walter Benajah, M.D. Gynecologist to the Bushwick Hospital; Attending Surgeon and Gynecologist, Central Hospital and Dispensary; Consulting Gynecologist to the Long Island College Hospital; Councillor to the Long Island College Hospital; Fellow of the Brooklyn Gynecological Society; (President, 1893); Member Medical Society County of Kings (President, 1892); Permanent Member Medical Society State of New York; Member of the Brooklyn Pathological Society, and Honorary Member of the Queens County Medical Society; *Executive Council*, 1899–1901. 263 Hancock Street, New York, Borough of Brooklyn.

Founder.—Clarke, Augustus Peck, A.M., M.D. Dean and Professor of Gynecology and Abdominal Surgery in the College of Physi-

cians and Surgeons, Boston; Vice-President of the American Medical Association, 1896; President of the Gynecological Society of Boston, 1891–92; Vice-President of the Pan-American Medical Congress, 1893, and of the Pan-American Medical Congress, Mexico, 1896; Honorary President of the Section of Obstetrics and Gynecology of the Twelfth International Medical Congress, Moscow, Russia, 1897; Member of the Massachusetts Medical Society; Fellow of the American Academy of Medicine; Member of the American Public Health Association. 825 Massachusetts Avenue, Cambridge, Mass.

1890.—*Coles, Walter, M.D. St. Louis, Mo. 1892.

1892.—†Cordier, Albert Hawes, M.D. Kansas City, Mo. 1900.

1894.—Crofford, Thomas Jefferson, M.D. Professor of Physiology and Clinical Lecturer on Diseases of Women in the Memphis Hospital Medical College; Member of the Southern Surgical and Gynecological Association. *Vice-President*, 1900. 155 Third Street, Memphis, Tenn.

1897.—Cumston, Charles Greene, B.M.S., M.D. (Geneva, Switzerland). Assistant Professor of Surgical Pathology, Tuft's College Medical School, Boston; Member of the Massachusetts Medical Society; Honorary Member of the Surgical Society of Belgium, and Corresponding Member of the Obstetrical and Gynecological Society of Paris; Corresponding Member of the Association of Genito-urinary Surgeons of France; Corresponding Member of the Pathological Society of Brussels, Belgium; Corresponding Member of the Electrotherapeutical Society of France. 871 Beacon Street, Boston, Mass.

Founder.—†Cushing, Clinton, M.D. San Francisco, Cal. 1900.

1894.—Davega, S. M., M.D. Surgeon to the Richmond and Danville Railroad, C. and L. R. R., C. and C. R. R., G. C. and N. R. R. Wylie Street, Chester, S. C.

1889.—Davis, William Elias B., M.D. Professor of Gynecology and Abdominal Surgery in the Birmingham Medical College; Secretary of the Southern Surgical and Gynecological Association, 1888–1900; formerly Surgeon to the Birmingham Hospital of United Charities; President of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, 1892; Secretary of the Surgical Section of the American Medical Association, 1891; Honorary President of the Section on Gynecology and Abdominal Surgery of the First Pan-American Medical Congress; Honorary Member of the Medical Society of the State of New York. *Vice-President*, 1895. *Executive Council*, 1897–1900. *President*, 1901. 2031 Avenue G., Birmingham, Ala.

1896.—DEAVER, JOHN BLAIR, M.D. Formerly Assistant Professor of Applied Anatomy at the University of Pennsylvania; Visiting Surgeon to the German Hospital. 1634 Walnut Street, Philadelphia, Pa.

1892.—DORSETT, WALTER BLACKBURN, M.D. Professor of Obstetrics in the Beaumont Hospital Medical College; President of the St. Louis Medical Society, 1892. President of the Missouri State Medical Society, 1900. *Vice-President*, 1898. 3941 West Bell Place, St. Louis, Mo.

1889.—DOUGLAS, RICHARD, M.D. Professor of Gynecology and Abdominal Surgery in the Vanderbilt Medical College; President of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, 1893; Fellow of the British Gynecological Society; President of the Southern Surgical and Gynecological Association, 1898. *Vice-President*, 1898. 110 South Spruce Street, Nashville, Tenn.

1892.—DUFF, JOHN MILTON, A.M., M.D., Ph.D. Chairman of the Section on Obstetrics and Diseases of Women in the American Medical Association, 1893; Professor of Obstetrics in the Western Pennsylvania Medical College; Gynecologist to the Western Pennsylvania Hospital; Consulting Surgeon and Gynecologist to the South Side Hospital; Fellow of the American Academy of Medicine; President of the Pittsburg Obstetrical Society, 1891. *Executive Council*, 1898–1900. 2006 Carson Street, Pittsburg, Pa.

1898.—DUNN, JAMES C., M.D. Obstetrician to Reineman Maternity Hospital. 208 Winebiddle Avenue, Pittsburg, Pa.

1895.—†DUNN, JAMES HENRY, M.D. Minneapolis Minn. 1899.

1895.—DUNN, B. SHERWOOD, M.D. Officier d'Académie; Corresponding Member of the Société Obstétrique et Gynécologique de Paris; Member of the Société Clinique des Praticiens de France, etc. Room 159, 80 Broadway, New York.

1892.—DUNNING, LEHMAN HERBERT, M.D. Professor of Diseases of Women in the Medical College of Indiana; Consulting Gynecologist to the Indianapolis City Hospital and Dispensary. *Executive Council*, 1899–1901. *Vice-President*, 1900. 431 North Alabama Street, Indianapolis, Ind.

1895.—EARLE, FRANK BRECKINRIDGE, M.D. Professor of Obstetrics at the College of Physicians and Surgeons. 903 W. Monroe Street, Chicago, Ill.

1899.—EASTMAN, THOMAS BOOKER, A.B., M.D. Professor of the Medical and Surgical Diseases of Women, Central College of Physi-

cians and Surgeons; Gynecologist to the City Hospital, City Dispensary, and Central Free Dispensary. 331 North Delaware Street, Indianapolis, Ind.

1895.—FERGUSON, ALEXANDER HUGH, M.D. Professor of Surgery at the Chicago Post-Graduate Medical School. 2950 Indiana Avenue, Chicago, Ill.

1895.—FISH, EDMUND FROST, M.D. Professor of Gynecology in Milwaukee Medical College; Gynecologist to the Trinity and Milwaukee County Hospital; Gynecologist to the Milwaukee Free Dispensary. 211 Grand Avenue, Milwaukee, Wis.

1890.—FREDERICK, CARLTON CASSIUS, B.S., M.D. Clinical Professor of Gynecology in the Medical Department of Buffalo University; Obstetrician and Gynecologist to the Buffalo Woman's Hospital; Obstetrician to the Widows' and Infants' Asylum; Gynecologist to the Erie County Hospital. 64 Richmond Avenue, Buffalo, N. Y.

1891.—GIBBONS, HENRY, JR., A.M., M.D. Dean and Professor of Obstetrics and Diseases of Women and Children in Cooper Medical College; Consulting Physician to the French and the Children's Hospitals. 920 Polk Street, San Francisco, Cal.

1895.—GILLIAM, DAVID TOD, M.D. Professor of Gynecology, Starling Medical College; Gynecologist to St. Anthony Hospital; Gynecologist to St. Francis Hospital; Consulting Gynecologist to State Street Dispensary; Member of the American Medical Association, Mississippi Valley Medical Association and Ohio State Medical Society; Honorary Member of the Northwestern Medical Society; Member and Ex-President of Columbus Academy of Medicine. 70 Winner Avenue, Columbus, Ohio.

1895.—GOLDSPOHN, ALBERT, M.D. Professor of Gynecology, Post-Graduate Medical School; Senior Gynecologist, German Hospital; Attending Gynecologist, Post-Graduate and Charity Hospitals. *Vice-President*, 1901. 519 Cleveland Avenue, Chicago, Ill.

1894.—GRIFFITH, JEFFERSON DAVIS, M.D. Professor of Surgery in the Kansas City Medical College; Surgeon to St. Joseph's Hospital and to the Children's Hospital. Corner Grand Avenue and Thirty-fifth Street, Kansas City, Mo.

1892.—*HAGGARD, WILLIAM DAVID, M.D. 1901.

1900.—HAGGARD, WILLIAM DAVID, JR., M.D. Professor of Gynecology, Medical Department University of Tennessee; Professor of

Gynecology and Abdominal Surgery, University of the South (Sewanee); Gynecologist to the Nashville City Hospital; President of the Nashville Academy of Medicine; Secretary of the Section on Diseases of Women and Obstetrics, American Medical Association, 1898; Fellow (and Secretary) of the Southern Surgical and Gynecological Association; Member of the Alumni Association of the Woman's Hospital, N. Y. Cor. Vine and Union Streets, Nashville, Tenn.

1889.—HALL, RUFUS BARTLETT, A.M., M.D. Professor of Gynecology and Clinical Gynecology at the Miami Medical College; Gynecologist to the Presbyterian Hospital; Member of the British Gynecological Association; of the Southern Surgical and Gynecological Association; of the American Medical Association; of the Ohio State Medical Society (President, 1900); of the Cincinnati Academy of Medicine; President of the Cincinnati Obstetrical Society, 1896. *Vice-President*, 1891. *President*, 1900. Berkshire Building, 628 Elm Street, Cincinnati, O.

1894.—HAYD, HERMAN EMILIE, M.D., M.R.C.S. Eng. Gynecologist to the Erie County Hospital. 493 Delaware Avenue, Buffalo, N. Y.

Founder.—*HILL, HAMPTON EUGENE, M.D. 1894.

1891.—HOLMES, JOSUS BILLINGTON SANDERS, M.D. Professor of Obstetrics in the Southern Medical College; President of the Georgia State Medical Association, 1890; Member of the Southern Surgical and Gynecological Association; Member of the American Medical Association. 17 West Cain Street, Atlanta, Georgia.

1891.—HOWITT, HENRY, M.D., M.R.C.S. Eng. Surgeon to the Guelph General and St. Joseph's Hospital, Guelph; Member of the British and Ontario Medical Association; Medical Health Officer for the City of Guelph. *Vice-President*, 1895. 235 Woolwich Street, Guelph, Ontario, Canada.

1896.—HUGHES, GEORGE MAURICE, M.D. Physician in Charge of the Obstetric and Gynecologic Department of the Philadelphia Dispensary. 241 North Eighteenth Street, Philadelphia, Pa.

1895.—HUMISTON, WILLIAM HENRY, M.D. Associate Professor of Gynecology in the Medical Department of Western Reserve University; Gynecologist-in-Chief to the St. Vincent's Charity Hospital; Consulting Gynecologist to the City Hospital; President of the Ohio State Medical Society, 1898. 122 Euclid Avenue, Cleveland, O.

1898.—HYDE, JOEL W., M.D. Obstetric Surgeon to St. Mary's Hospital; Consulting Obstetrician to the Long Island College Hos-

pital; Consulting Gynecologist to Central Hospital. 215 Schermerhorn Street, Brooklyn, N. Y.

1892.—*Hypes, Benjamin Murray, A.M., M.D. St. Louis, Mo. 1900.

Founder.—Ill, Edward Joseph, M.D. Surgeon to the Woman's Hospital; Medical Director of St. Michael's Hospital; Gynecologist and Supervising Obstetrician to St. Barnabas's Hospital; Consulting Gynecologist to the German Hospital and the Bnoth Israel Hospital of Newark, N. J., to All Soul's Hospital, Morristown, N. J., and to the Mountain Side Hospital, Montclair, N. J.; Member of the Southern Surgical and Gynecological Association. Vice-President from New Jersey to the Pan-American Congress of 1893. *Vice-President*, 1893. *President*, 1899. *Executive Council*, 1901. 1002 Broad Street, Newark, N. J.

1897.—Ingraham, Henry Downer, M.D. Clinical Professor of Gynecology and Pediatrics, Medical Department of the University of Buffalo; Consulting Gynecologist to the Buffalo Woman's Hospital and to the Erie County Hospital; Consulting Gynecologist to Providence Hospital. 405 Franklin Street, Buffalo, N. Y.

Founder.—†Jarvis, George Cyprian, M.D. Hartford, Conn. 1900.

1894.—Jayne, Walter Addison, M.D. Professor of Gynecology in the Medical Department of the University of Denver; Consultant in Gynecology, St. Luke's Hospital; Gynecologist to the Arapahoe County Hospital, Denver. 217 McPhee Building, Denver, Col.

1892.—Jelks, James Thomas, M.D. President of the Arkansas Medical Society, 1892; Chairman of the Section on Surgery in the American Medical Association, 1898; Professor of Gynecology in Barnes Medical College, St. Louis, Mo. Member of the Southern Surgical and Gynecological Association. 178 Central Avenue, Hot Springs, Ark.

1894.—Jennings, Charles Godwin, M.D. Professor of the Theory and Practice of Medicine and Clinical Diseases of Children in the Detroit College of Medicine; Physician to St. Mary's Hospital, Department of Diseases of Children; Physician to St. Vincent's Orphan Asylum; Consulting Physician to the Woman's Hospital and Foundlings' Home; Consulting Physician to St. Luke's Hospital; Member of the American Pediatric Society. 457 Jefferson Avenue, Detroit, Mich.

1891.—JOHNSTON, GEORGE BEN, M.D. Professor of the Practice of Surgery and Clinical Surgery in the Medical College of Virginia; Surgeon to the Old Dominion Hospital; Physician to St. Joseph's Female Orphan Asylum; Consulting Surgeon to the City Free Dispensary; Member of the American Surgical Association; Vice-President of the Southern Surgical and Gynecological Association, 1892; President, 1897; Ex-President of the Richmond Medical and Surgical Society; President of the Virginia State Medical Society, 1897. *Vice-President*, 1897. 407 East Grace Street, Richmond, Va.

1900.—KELLY, WEBB J., M.D. Surgeon to the Erie and Cleveland, Columbus, Cincinnati and St. Louis Railways; formerly Professor of Operative Surgery at the Ohio Medical University at Columbus. 229 North Columbus Street, Galion, O.

1893.—LAIDLEY, LEONIDAS HAMLIN, M.D. Professor of Gynecology in the Beaumont Hospital Medical College; Surgeon-in-Chief to the Protestant Hospital. 3538 Washington Avenue, St. Louis, Mo.

1898.—LANGFIT, WILLIAM STERLING, M.D. Surgeon-in-Chief to St. John's Hospital. 688 Preble Avenue, Allegheny, Pa.

1900.—LINVILLE, MONTGOMERY, A.B., M.D. Surgeon to Slemango Valley Hospital; Surgeon to three lines of Pennsylvania Railways. 35 North Mercer Street, New Castle, Pa.

1890.—LONGYEAR, HOWARD WILLIAMS, M.D. Gynecologist to Harper Hospital; Physician to the Woman's Hospital; President of the Detroit Gynecological Society, 1889; Chairman of the Section on Obstetrics and Gynecology of the Michigan State Medical Society, 1892. *Vice-President*, 1893. 698 Woodward Avenue, Detroit, Mich.

Founder.—†LOTHROP, THOMAS, M.D. Buffalo, N. Y. 1899.

1896.—LYONS, JOHN ALEXANDER, M.D. Instructor in Gynecology at the Post-Graduate Medical School; Gynecologist and Lecturer to Nurses at the Chicago Hospital. 4118 State Street, Chicago, Ill.

1891.—MACDONALD, WILLIS GOSS, M.D. Lecturer on Operative Surgery and Instructor in Abdominal Surgery in Albany Medical College; Surgeon to the Out-door Department of the Albany Hospital. 27 Eagle Street, Albany, N. Y.

1891.—*MCCANN, JAMES, M.D. Pittsburg, Pa. 1893.

1898.—MCCANN, THOMAS, M.D. Professor of Surgery, etc., Western Pennsylvania Medical College; Visiting Surgeon, Western Pennsylvania Hospital. 3745 Centre Street, Pittsburg, Pa.

1894.—†McGUIRE, EDWARD, M.D. Richmond, Va. 1900.

Founder.—McMURTRY, LEWIS SAMUEL, A.M., M.D. Professor of Gynecology in the Hospital College of Medicine; Gynecologist to Sts. Mary and Elizabeth Hospital; Fellow of the Edinburgh Obstetrical Society; Fellow of the British Gynecological Society; Corresponding Member of the Obstetrical Society of Philadelphia and of the Gynecological Society of Boston; Member (President, 1891) of the Southern Surgical and Gynecological Association. *Executive Council*, 1891–1892, 1895–1901; *President*, 1893. 1912 Sixth Street, Louisville, Ky.

Founder.—MANTON, WALTER PORTER, M.D. Professor of Clinical Gynecology and Adjunct Professor of Obstetrics, Detroit College of Medicine; Gynecologist to Harper Hospital and the Eastern Michigan Asylum for the Insane; Vice-President of Medical Board of the Woman's Hospital and Foundlings' Home; Consulting Gynecologist to the Northern Michigan Asylum and St. Joseph's Retreat; Gynecic Surgeon to the House of the Good Shepherd; President of the Detroit Academy of Medicine, 1892–1894; President of the Detroit Gynecological Society, 1890; Fellow of the British Gynecological Society; Fellow of the Royal Microscopical Society and of the Zoölogical Society of London. *Vice-President*, 1894. 32 Adams Avenue, W. Detroit, Mich.

Founder.—MAXWELL, THOMAS JEFFERSON. M.D. Professor of the Principles and Practice of Surgery and Clinical Surgery in the Keokuk Medical College; Surgeon to St. Joseph's Hospital. 727 North Ninth Street, Keokuk, Iowa.

1893.—*MICHAEL, JACOB EDWIN, A.M., M.D. Baltimore, Maryland. 1895.

Founder.—MILLER, AARON BENJAMIN, M.D. Professor of Gynecology in the Medical Department of Syracuse University; Gynecologist to St. Joseph's Hospital, House of the Good Shepherd and Dispensary. *Vice-President*, 1899. 326 Montgomery Street, Syracuse, N. Y.

1896.—*MOONEY, FLETCHER D., M.D. St. Louis, Mo. 1897.

1890.—MORRIS, ROBERT TUTTLE, A.M., M.D. Professor of Surgery in the New York Post-Graduate Medical School and Hospital. *Vice-President*, 1892. 58 West Fifty-sixth Street, New York, N. Y.

Founder.—MOSES, GRATZ ASHE, M.D. (See Honorary Fellows.)

1894.—MURPHY, JOHN BENJAMIN, A.M., M.D. Professor of Surgery in the College of Physicians and Surgeons and in the Post-Graduate Medical College; Attending Surgeon to the Cook County Hospital

and to Alexander Hospital. Residence, 3152 Michigan Avenue; Office, 400 Reliance Building, 100 State Street, Chicago, Ill.

Founder.—MYERS, WILLIAM HERSCHEL, M.D. Professor of Clinical and Abdominal Surgery, Fort Wayne College of Medicine; Surgeon to St. Joseph's Hospital; Member of the American and the British Medical Associations; Member of the Pathological Society of London; Member of the International Congress of Gynecologists and Obstetricians; Member of the Chicago Medical Society. *Vice-President*, 1890. 157 West Wayne Street, Fort Wayne, Indiana.

1897.—NICHOLS, WILLIAM R., M.D. Markham, Ont., Canada.

1896.—NOBLE, GEORGE HENRY, M.D. Gynecologist to the Grady Hospital; Secretary of the Section on Obstetrics and Gynecology of American Medical Association, 1897; Member of the Southern Surgical and Gynecological Association. 131 and 133 South Pryor Street, Atlanta, Georgia.

1889.—PAINE, JOHN FANNIN YOUNG, M.D. Professor of Obstetrics and Gynecology in the School of Medicine, University of Texas; Obstetrician and Gynecologist to the John Sealy Hospital; President of the Texas State Medical Association, 1888; Vice-President of the Section on Public and International Hygiene in the Ninth International Medical Congress; Member of the American Medical Asociation and the Southern Surgical and Gynecological Association. S. E. corner Broadway and Twenty-sixth Street, Galveston, Texas.

1899.—PANTZER, HUGO O., M.D. Gynecologist to the City Hospital and City Dispensary; Consulting Gynecologist to the Deaconess's Hospital and to the Indiana State Hospital. 316 East Michigan Street, Indianapolis, Ind.

1890.—PEARSON, WILLIAM LIBBEY, M.D. 713 Union Street, Schenectady, N. Y.

1891.—PECK, GEORGE SHERMAN, M.D. Consulting Surgeon to the Youngstown City Hospital. *Vice-President*, 1896. 26 West Federal Street, Youngstown, Ohio.

1899.—PFAFF, ORANGE G., M.D. Adjunct Professor of Obstetrics and Diseases of Women in the Medical College of Indiana; Gynecologist to the City, Deaconess's, and St. Vincent's Hospitals. 1337 North Pennsylvania Street, Indianapolis, Ind.

1898.—PORTER, MILES F., M.D. Ex-President Indiana State Medical Society. 47 West Wayne Street, Fort Wayne, Indiana.

Founder.—POTTER, WILLIAM WARREN, M.D., Consulting Gynecologist to the Woman's Hospital; Consulting Surgeon to the Buffalo General Hospital; President and Examiner in Obstetrics, New York State Medical Examining and Licensing Board; Chairman of Section of Obstetrics and Diseases of Women, American Medical Association, 1890; President of the Buffalo Obstetrical Society, 1884–1886; Member of the Southern Surgical and Gynecological Association; President of the Medical Society of the State of New York, 1891; Executive President of the Section of Gynecology and Abdominal Surgery, Pan-American Medical Congress, 1893. *Secretary,* 1888–1901. 284 Franklin Street, Buffalo, N. Y.

1891.—*PRAEGER, E. ARNOLD, M.D. Los Angeles, Cal. 1898.

Founder.—PRICE, JOSEPH, M.D. Physician-in-Charge of the Obstetrical and Gynecological Department of the Philadelphia Dispensary; Member of the Southern Surgical and Gynecological Association; Honorary Fellow of the Medical Society of the State of New York; Honorary Fellow of the South Carolina Medical Society; Honorary Fellow of the Virginia Medical Society; Member of the British Gynecological Association and of the Edinburgh Obstetrical Society. *Executive Council,* 1894–1895. *President,* 1896. 241 North Eighteenth Street, Philadelphia, Pa.

Founder.—REED, CHARLES ALFRED LEE, A.M., M.D. Professor of Gynecology and Abdominal Surgery in the Cincinnati College of Medicine and Surgery and in the Woman's Medical College of Cincinnati; Surgeon to the Cincinnati Free Surgical Hospital for Women; Secretary-General of the First Pan-American Medical Congress, 1893; Member of the Southern Surgical and Gynecological Association; Fellow of the British Gynecological Society; President of the American Medical Association, 1901. *Executive Council,* 1890–1897; *President,* 1898. St. Leger Place, Cincinnati, Ohio.

1896.—RHETT, ROBERT BARNWELL, JR., M.D. Dean and Professor of Gynecology and Abdominal Surgery at the Charleston Medical School; Gynecologist to St. Francis Xavier's Infirmary; Surgeon to the City Hospital. 109 Cannon Street, Charleston, S. C.

1890.—RICKETTS, EDWIN, M.D. Professor of Abdominal Surgery and Gynecology at the Cincinnati Polyclinic; Member of the American and British Medical Association; Member of the Southern Surgical and Gynecological Association. *Vice-President,* 1899. *Executive Council,* 1901. 415 Broadway, Cincinnati, Ohio.

1889.—*ROHÉ, GEORGE HENRY, M.D. Baltimore, Md. 1899.

1892.—ROSENWASSER, MARCUS, M.D. Dean and Professor of Diseases of Women and Abdominal Surgery in the University of Wooster; Gynecologist to the Cleveland Hospital for Women and Children; Consulting Gynecologist to the City Hospital; Member of the American Medical and Ohio State Medical Associations. 722 Woodland Avenue, Cleveland, O.

1890.—ROSS, JAMES FREDERICK WILLIAM, M.D., L.R.C.P. (Eng.). Gynecologist to the Toronto General Hospital; Surgeon to the Woman's Hospital; Lecturer in Clinical Gynecology at the University of Toronto. *Executive Council*, 1892–1896; *President*, 1897. 481 Sherbourne Street, Toronto, Ont., Canada.

1895.—SELLMAN, WILLIAM ALFRED BELT, M.D. Professor of the Diseases of Women and Children at the Baltimore University School of Medicine; Member of the Medical and Chirurgical Faculty of Maryland; also of the Baltimore Medical and Surgical Association; the Gynecological and Obstetrical Association of Baltimore; the Clinical Society; the Baltimore Journal Club; the American Medical Association, etc. 5 East Biddle Street, Baltimore, Md.

1890.—SEXTON, JOHN CHASE, A.M., M.D. *Executive Council*, 1894. *Vice-President*, 1897. Rushville, Indiana.

1889.—SEYMOUR, WILLIAM WOTKYNS, A.B., M.D. Surgeon to the Samaritan Hospital, Troy, N. Y.; formerly House Surgeon of the Boston City Hospital; Member of the American Medical Association; Fellow of the New York State Medical Association; Member of the British Medical Association. *Executive Council*, 1892–1893. 105 Third Street, Troy. N. Y.

1899.—SIMPSON, FRANK FARROW, A.B., M.D. Assistant Gynecologist to Mercy Hospital. 524 Penn Avenue, Pittsburg, Pa.

1891.—SMITH, CHARLES NORTH, M.D. Professor of Obstetrics and Clinical Gynecology in the Toledo Medical College; Gynecologist to St. Vincent's Hospital. 234 Michigan Street, Toledo, O.

1895.—STEELE, DANIEL ATKINSON KING, M.D. President and Professor of the Principles and Practice of Surgery at the College of Physicians and Surgeons; Attending Surgeon at the Chicago, Wesley, and Post-Graduate Hospitals; Consulting Surgeon at the Palmer Memorial Hospital, Janesville, Wis. 2920 Indiana Avenue, Chicago Illinois.

Founder.—*STORRS, MELANCTHON, A.M., M.D. Hartford, Conn. (See Honorary List, 1899.) 1900.

1894.—STOVER, CHARLES, M.D. 31 Division Street, Amsterdam, N. Y.

1899.—SWOPE, LORENZO W., M.D. Surgeon to the Consolidated Traction Company; Assistant Surgeon to the West Pennsylvania Hospital. 3609 Forbes Street, Pittsburg, Pa.

1894.—†TAPPEY, ERNEST TAYLOR, A.M., M.D. Detroit, Mich. 1899.

1894.—TAYLOR, HUGH MCGUIRE, M.D. Professor of the Practice of Surgery in the University College of Medicine, Richmond, Va.; Member of the Surgical Staff of the Virginia Hospital, Richmond, Va.; Ex-President of the Medical Examining Board of Virginia; Ex-President of the Richmond Medical and Surgical Society; Member of the American Medical Association; Member of the Southern Surgical and Gynecological Association; Member of the National Association of Railway Surgeons. 6 North Fifth Street, Richmond, Va.

1890.—THOMAS, GEORGE GILLETT, M.D. Ex-President Medical Society of the State of North Carolina. Wilmington, N. C.

1898.—†THOMAS, JOSEPH DIO, M.D. Pittsburg, Pa. 1900.

1895.—THOMPSON, FRANK DANIEL, M.D. Professor of Gynecology in the Medical Department of Fort Worth University. 412 Adams Street, Fort Worth, Texas.

1895.—TOMPKINS, CHRISTOPHER, M.D., Ph.D. Professor of Obstetrics and Dean of the Medical College of Virginia; Obstetrician to the Old Dominion Hospital; Member of the Southern Surgical and Gynecological Association. 116 East Franklin Street, Richmond, Va.

Founder.—*TOWNSEND, FRANKLIN, A.M., M.D. Albany, N. Y. 1895.

Founder.—VANDER VEER, ALBERT, A.M., M.D., Ph.D. Professor of Didactic, Clinical, and Abdominal Surgery in the Albany Medical College; Attending Surgeon to the Albany Hospital; Consulting Surgeon to St. Peter's Hospital; Fellow of the American Surgical Association; Fellow of the British Gynecological Society; Member of the Southern Surgical and Gynecological Association; Corresponding Member of the Boston Gynecological Society. *Executive Council*, 1889–1891, 1895–1901; *President*, 1892. 28 Eagle Street, Albany, N. Y.

1891.—WALKER, EDWIN, M.D., Ph.D. Gynecologist to the Evansville City Hospital; President of the Indiana State Medical Society, 1892; Member of the American Medical Association and of the Mississippi Valley Medical Association; Member of the Southern Surgical and Gynecological Association. *Vice-President*, 1901. 427 Upper Third Street, Evansville, Indiana.

1889.—WENNING, WILLIAM HENRY, A.M., M.D. Professor of Obstetrics in the Woman's Medical College; Gynecologist to St. Mary's Hospital. 722 Laurel Street, Cincinnati, Ohio.

Founder.—WERDER, XAVIER OSWALD, M.D. Professor of Gynecology at the Western Pennsylvania Medical College (Medical Department, University of Western Pennsylvania); Consulting Gynecologist at the Allegheny General Hospital; Gynecologist to the Mercy Hospital and Pittsburg Free Dispensary; Obstetrician to the Roselia Maternity Hospital; Consulting Gynecologist to St. Francis's Hospital; Consulting Surgeon to the South Side Hospital. *Treasurer*, 1888–1901. 524 Penn Avenue, Pittsburg, Pa.

1896.—WESTMORELAND, WILLIS FOREMAN. Professor of Surgery at the Atlanta Medical College. Equitable Building, Atlanta, Georgia.

1895.—WHEATON, CHARLES AUGUSTUS, M.D. Professor of Clinical Surgery in the University of Minnesota. 301 Summit Avenue, St. Paul, Minn.

1897.—WHITBECK, JOHN W., M.D. Gynecologist to the Rochester City Hospital; Commissioner of the Board of Health. 322 East Avenue, Rochester, N. Y.

1897.—WILLIAMS, HENRY T., M.D. Attending Surgeon, City Hospital; Attending Surgeon, St. Mary's Hospital; Attending Surgeon, Monroe County Penitentiary; Consulting Surgeon to the Home for the Friendless. 274 Alexander Street, Rochester N. Y.

Founder.—WRIGHT, ADAM HENRY, B.A., M.D. 30 Gerrard Street, East, Toronto, Ont., Canada. Transferred to Corresponding List. q. v.

1900.—ZINKE, ERNST GUSTAV, M.D. Professor of Obstetrics and Clinical Midwifery in the Medical College of Ohio, University of Cincinnati; Obstetrician and Gynecologist to the German Hospital; Obstetrician to the Maternity Hospital. 13 Garfield Place, Cincinnati, Ohio.

Total, one hundred Ordinary Fellows.

MINUTES OF THE PROCEEDINGS

AT THE

THIRTEENTH ANNUAL MEETING

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS,

HELD IN THE

LADIES' ORDINARY OF THE GALT HOUSE,

Louisville, Kentucky,

SEPTEMBER 18, 19, AND 20, 1900.

THIRTEENTH ANNUAL MEETING.

LOUISVILLE, KENTUCKY, SEPTEMBER 18, 19, AND 20, 1900.

The following-named Fellows were present:

BALDWIN, JAMES F.	COLUMBUS.
CARSTENS, J. HENRY	DETROIT.
CROFFORD, THOMAS J.	MEMPHIS.
CUMSTON, CHARLES G.	BOSTON.
DAVIS, WILLIAM E. B.	BIRMINGHAM.
DEAVER, JOHN B.	PHILADELPHIA.
DOUGLAS, RICHARD	NASHVILLE.
DUNNING, LEHMAN H.	INDIANAPOLIS.
FISH, EDMUND F.	MILWAUKEE.
GILLIAM, D. TOD	COLUMBUS.
GOLDSPOHN, ALBERT,	CHICAGO.
HALL, RUFUS B.	CINCINNATI.
HOWITT, HENRY	GUELPH.
ILL, EDWARD J.	NEWARK.
JELKS, JAMES T.	HOT SPRINGS.
KELLY, WEBB J.	GALION.
LAIDLEY, L. H.	ST. LOUIS.
MATHEWS, JOSEPH McD.	LOUISVILLE.
McMURTRY, LEWIS S.	LOUISVILLE.
PANTZER, HUGO O.	INDIANAPOLIS.
PFAFF, ORANGE G.	INDIANAPOLIS.
POTTER, WILLIAM W.	BUFFALO.
PRICE, JOSEPH	PHILADELPHIA.
REED, CHARLES A. L.	CINCINNATI.
RICKETTS, EDWIN	CINCINNATI.
ROSS, JAMES F. W.	TORONTO.
SIMPSON, FRANK F.	PITTSBURG.
THOMPSON, FRANK D.	FORT WORTH.
VANDER VEER, ALBERT	ALBANY.
WALKER, EDWIN	EVANSVILLE.
ZINKE, E. GUSTAV	CINCINNATI.

Total, thirty-one Fellows.

Letters or messages of regret were received from the following-named Fellows:

Honorary.—A. Cordes, Geneva; J. McFadden Gaston; Max Sänger, Prague; George M. Sternberg, Washington.

Corresponding.—A. H. Wright, Toronto.

Ordinary.—David Barrow, Frederick Blume, Walter B. Chase, A. P. Clarke, Clinton Cushing, Walter B. Dorsett, John Milton Duff,

C. C. Frederick, Wm. D. Haggard, Jr., H. E. Hayd, J. B. S. Holmes, William H. Humiston, J. W. Hyde, Henry D. Ingraham, George Ben Johnston, W. G. Macdonald, Edward McGuire, W. P. Manton, A. B. Miller, Robert T. Morris, John B. Murphy, W. H. Myers, George H. Noble, George S. Peck, M. Rosenwasser, William Wotkyns Seymour, Hugh M. Taylor, Christopher Tompkins, X. O. Werder, and Charles A. Wheaton.

On recommendation of the Executive Council the following physicians were invited to attend the sessions and participate in the proceedings:

Bailey, William,	Louisville.	Stuckey, Thos. Hunt,	Louisville.
Bate, K. A.,	"	Trunnell, P. G.,	"
Bodine, J. M.,	"	Tuley, Henry E.,	"
Brandeis, Florence,	"	Turner, W. K.,	"
Buckle, B.,	"	Vance, Ap. Morgan,	"
Buller, Thos. L.,	"	Wassmer, Julius I.,	"
Cartledge, A. M.,	"	Wathen, John R.,	"
Cheatham, W.,	"	Wathen, W. H.,	"
Cowes, M.,	"	Weidner, Carl,	"
Evans, J. C.,	"	Botts, A. T.,	Glasgow, Ky.
Frank, Louis,	"	Chamberlin, J. B.,	Cynthiana, Ky.
Frazier, Ben Carlos,	"	Coggeshall, F.,	Boston.
Gilbert, R. B.,	"	Davis, J. T.,	Jeffersonville.
Gossett, Walker B.,	"	Duncan, J. B.,	Bedford, Ind.
Grant, H. H.,	"	Freeman, J. A.,	Beard, Ky.
Hall, G. C.,	"	Graham, Hannah M.,	Indianapolis.
Hays, John E.,	"	Hale, J. A.,	Alto Pass, Ill.
Hertzsch, Della,	"	Hughes, A. E.,	Lexington, Ky.
Hurter, A. W.,	"	Ill, Charles L.,	Newark.
Ingram, Julia,	"	Love, I. N.,	New York.
Johnson, J. L.,	"	Luckett, L. P.,	Terre Haute, Ind.
Kelly, C. W.,	"	McChord, R. C.,	Lebanon, Ky.
Lawrence, A. P.,	"	McHenry, J. H.,	Owensboro, Ky.
Monroe, A. Light,	"	McKamy, Anna,	New Albany, Ind.
Monroe, George J.,	"	McRae, Floyd W.,	Atlanta.
Oglesby, B. A.,	"	Simmons, George H.,	Chicago.
Richardson, John B.,	"	Sweeney, Thompson,	New York.
Sherrill, H. F.,	"	Tate, M. W.,	Cincinnati.
Speidel, Edward,	"	Trigg, L. B.,	Glasgow, Ky.
Stone, Barton W.,	"		

FIRST DAY.—*Tuesday, September 18th.*

Morning Session.—The Association met at the Galt House and was called to order by the President, Dr. Rufus B. Hall, of Cincinnati, Ohio, at 9.30 A.M.

Dr. Lewis S. McMurtry, of Louisville, Chairman of the Local Committee of Arrangements, made the following report:

REPORT OF THE COMMITTEE OF ARRANGEMENTS.

FELLOWS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS: As you will see by the programme, the Association will meet in executive session, with closed doors, on Tuesday, September 18th, at 9.30 A.M., for the election of new Fellows. At 9.50 the doors will be thrown open, when there will be a short address of welcome, which will be responded to by the President. The session for the reading of scientific papers will begin at 10 o'clock. Recess for luncheon at 1 o'clock P.M. Afternoon session at 3 o'clock; recess at 5.30 o'clock; evening session at 7.30 o'clock.

The morning session will begin on Wednesday at 9.30 o'clock, when the reading of scientific papers will be continued. Recess at 1 o'clock. Afternoon session at 3 o'clock. Recess at 5.30 o'clock until the executive session.

At 6.30 P.M., Wednesday, the executive session will convene for the election of officers and for such business as may come before it under the rules. Only Fellows are admitted to the executive sessions.

The morning session will begin Thursday at 9.30 o'clock and continue until 1 o'clock P.M., when recess will be taken for luncheon. The afternoon session will be called at 2.30 o'clock, and at 5 o'clock the closing ceremonies, including the induction of the officers-elect, will take place.

The Executive Council recommends to the consideration of the Fellows the propriety of restricting the reading of the papers to twenty minutes as a limit, and that discussions be confined to the text of the paper under consideration, as far as it is possible to do so consistently with a clear presentation of the views of those who participate in the debates.

At 7.30 o'clock P.M., Wednesday, immediately after the executive session, the annual dinner will be served at the Galt House.

After making the report of the Committee of Arrangements Dr. McMurtry welcomed the Association, as follows:

ADDRESS OF WELCOME.

MR. PRESIDENT AND FELLOWS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS: In the first half of the century now so near its end, Southwestern medicine established its Mecca at the Falls of the Ohio River. Here was established during the first half of the century a famous medical school. Here

Silliman and Drake, and Flint and Palmer, and Miller and other famous teachers attracted students from all parts of the great Southwest. Within a few hundred yards from where you are now sitting Gross wrote his great *System of Surgery* and his epoch-making treatise on *Pathological Anatomy*. It is eminently appropriate that this Association of distinguished surgeons should gather upon this historic spot to conduct its annual session.

Our organization has performed a great service to science and to the profession during the twelve years of its existence. These have indeed been eventful years in the progress of all departments of surgery. This Association has brought forward men of distinguished ability who have made their influence felt in promoting scientific advancement and moulding professional opinion. With the aid of that great machine, the medical press, its influence has reached far and near. I doubt not that the volume to be made during this session will equal the splendid productions of former years.

It is my pleasing duty on this occasion to welcome you in behalf of the medical profession of this city to Louisville, a profession which, I assure you, in scientific attainments and courteous dignity, is worthy the traditions of former years. By the rules of the Association we are somewhat restricted in our desires to contribute to your pleasure socially. We deem it an honor to have so many distinguished members of our profession in this city, and it will be to us a genuine pleasure to entertain you and contribute in every possible way to your comfort and pleasure.

RESPONSE TO THE ADDRESS OF WELCOME BY THE PRESIDENT, DR. RUFUS B. HALL.

DR. MCMURTRY: On behalf of the American Association of Obstetricians and Gynecologists, I thank you heartily for the kindly welcome you have extended to us. We have all heard of the greatness of Louisville and we are proud to be here, where medicine has been so renowned and distinguished in the past. Every one of us should point with commendable pride to the fact that in this city the elder Gross established his reputation—a reputation which will exist as long as surgery. We are glad to learn, too, that Flint, the founder of physical diagnosis, and one of the greatest teachers that ever taught clinical medicine, was also a teacher here. Louisville is a great city in many respects. More than one Fellow of this Association can testify as to the beauty and versatility of your women and the cordiality and generous hospitality of your men, and it is really a renewed pleasure to be with you.

Our Fellowship covers a wide distance. In scanning the list of arrivals I find that we have one present from Texas and another one from Massachusetts, one from the extreme southern part of Alabama, another from Wisconsin, and still another from Canada; so nearly all quarters of the country are represented here to-day. We have assembled for mental improvement and physical recreation. We meet one another annually to renew friendships, and our love for one another grows stronger at each and every annual meeting. We are not only here to make a book, but to advance the science of this department of surgery, to exchange ideas, to sift out the chaff, to put on record the true facts up to the very hour of our meeting.

Again, Dr. McMurtry, I thank you for the hearty welcome which you have tendered to us on behalf of your colleagues, and I trust that all of us will carry away pleasant recollections of our stay in Louisville.

Papers were then read as follows:

1. "Erroneous Objections to Bilateral Inguinal Celiotomy and Shortening of the Round Ligaments *via* the Dilated Internal Inguinal Rings, and its Superior Ultimate Results in Simple and Complicated Aseptic Retroversions of the Uterus," by Dr. A. Goldspohn, of Chicago, Ill.

2. "Round Ligament Ventrosuspension of the Uterus," by Dr. D. Tod Gilliam, of Columbus, Ohio.

These two papers were discussed jointly by Drs. Cumston, Ill, Carstens, Davis, Coggeshall, Hall, Fish, and the discussion was closed by the essayist.

On motion of Dr. McMurtry, visiting members and guests of the Association were accorded the privileges of the floor and invited to participate in the discussions.

On motion the Association adjourned until 2.30 P.M.

Afternoon Session, 2.30 *o'clock.*

The President in the Chair.

3. "Composite Teratoma of the Ovary," by Dr. W. E. B. Davis, of Birmingham, Ala.

Discussed by Drs. Ill, Goldspohn, and Cumston.

4. "Treatment of Chronic Cystitis in the Female by Curetment of the Bladder and Instillations of Corrosive Sublimate," by Dr. Charles Greene Cumston, of Boston, Mass.

Discussed by Drs. Goldspohn, Hall, Carstens, Ricketts, Jelks, Crofford, and the discussion closed by the essayist.

5. "Notes of Four Cases of Perforated Gastric Ulcer, with Remarks," by Dr. Henry Howitt, of Guelph, Ontario.

Discussed by Drs. Crofford, Douglas, Ross, Cumston, Davis, Ricketts, McRae, Vander Veer, Gilliam, and the author of the paper.

On motion the Association adjourned until 8 P.M.

Evening Session, 8 o'clock.

The President in the Chair.

6. "Some Points Regarding Surgery of the Gall-bladder," by Dr. A. Vander Veer, of Albany, N. Y.

Discussed by Drs. Ricketts, Gilliam, Jelks, McMurtry, Cumston, Walker, Ross, Davis, Hall, Goldspohn, Carstens, Douglas, and, in closing, by the essayist.

On motion the Association adjourned until 9.30 A.M. Wednesday.

SECOND DAY.—*Wednesday, September 19th.*

Morning Session.—The President in the Chair.

Dr. Charles G. Cumston reported a case of Carcinoma of the Cecum.

7. "Diagnosis of Ectopic Pregnancy before Rupture, Based on Eleven Cases," by Dr. James F. Baldwin, of Columbus, Ohio.

Discussed by Drs. Ill, Reed, Laidley, Zinke, Gilliam, Goldspohn, Carstens, and the discussion closed by the author of the paper.

8. "Contribution to the Surgical Treatment of Uterine Displacements," by Dr. Charles A. L. Reed, of Cincinnati, Ohio.

Discussed by Drs. Goldspohn, Gilliam, Carstens, Cumston, Vander Veer, and Reed.

9. "Ovarian Fibroma: A Case with Microscopical Report," by Dr. L. H. Laidley, of St. Louis, Mo.

Discussed by Drs. Baldwin and Zinke.

10. "Papilloma of the Vulva, with Specimens," by Dr. Edward J. Ill, of Newark, N. J.

Discussed by Drs. Gilliam and Goldspohn.

Specimens were then presented and cases reported by Drs. Laidley, Hall, and Pfaff, which were discussed.

At this juncture the President delivered his address. He selected for his subject "Education of the Laity upon Sexual Matters: When Shall they be Taught and to What Extent?"

On motion the Association took a recess until 2.30 o'clock.

Afternoon Session, 2.30 o'clock.

The President in the Chair.

11. "Private Hospitals and Their Management," by Dr. Joseph Price, of Philadelphia.

Discussed by Drs. Jelks, Dunning, Deaver, Ricketts, Davis, Bald-

win, Walker, Hall, Carstens, Laidley, Vander Veer, Douglas, McRae, and the discussion closed by Dr. Price.

12. "Post-rectal Tumors, with Cases," by Dr. James F. W. Ross, of Toronto, Ontario.

Discussion postponed until the morning session.

On motion the Association adjourned until Thursday, at 9.30 A. M.

THIRD DAY.—*Thursday, September 20th.*

Morning Session.—The President in the Chair.

The paper of Dr. Ross was discussed by Drs. Douglas, Price, Goldspohn, Vander Veer, and Ricketts.

13. "The Ligature and the Value of Dry Sterilized Catgut," by Dr. J. Henry Carstens, of Detroit, Mich.

Discussed by Drs. Goldspohn, Gilliam, Deaver, Hall, Ricketts, Jelks, Cumston, and the discussion closed by the essayist.

14. "Some Contraindications to the Intraperitoneal Use of Normal Salt Solution after Abdominal Section," by Dr. Frank F. Simpson, of Pittsburg, Pa.

Discussed by Drs. Price, Jelks, Carstens, Walker, Goldspohn, and the discussion closed by the essayist.

15. "Simple Methods in Pelvic Surgery," by Dr. John B. Deaver, of Philadelphia, Pa.

Discussed by Drs. Vander Veer, Dunning, McMurtry, Price, Carstens, Goldspohn, and the discussion closed by the essayist.

16. "Treatment of Fibroids in the Non-pregnant Uterus," by Dr. Edmund F. Fish, of Milwaukee, Wis.

Discussed by Drs. Vander Veer, Price, Zinke, and the discussion closed by the essayist.

On motion the Association took a recess until 2.30 o'clock.

Afternoon Session, 2.30 o'clock.

Vice-President Crofford in the Chair.

17. "Acute Senile Endometritis," by Dr. L. H. Dunning, of Indianapolis, Ind.

Discussed by Drs. Vander Veer, Ill, Gilliam, Goldspohn, and the discussion closed by the author.

18. "Tubo-ovarian Abscess: How Best to Deal with it," by Dr. Edwin Ricketts, of Cincinnati, Ohio.

Discussed by Drs. Jelks, Dunning, Carstens, Zinke, McMurtry, Hall, Vander Veer, and the discussion closed by the essayist.

Letters of regret were read from Drs. Robert T. Morris, Walter B. Chase, and others.

Dr. F. W. McRae moved that the Association extend to the family of Dr. Hunter McGuire its profound sympathy in their bereavement, and that the Secretary be requested to send a telegram conveying these expressions. Seconded and carried.

The Secretary sent the following telegram to Mrs. McGuire:

"The American Association of Obstetricians and Gynecologists, now in session at Louisville, learns with deep regret of the demise of your distinguished and esteemed husband, Dr. Hunter McGuire, and desires to express appreciation of his inestimable services to the cause of medical science; and to you the sympathy of every Fellow of the Association in your direful affliction."

The following resolutions offered by the Executive Council were read by the Secretary:

Resolved, That the thanks of the Association be and are hereby tendered to: 1. The medical profession of Louisville for many courtesies extended to the Fellows of the Association, individually and collectively, and for their full attendance upon the sessions and at the banquet. 2. To the management of the Galt House for the admirable arrangements made for the accommodation of the Fellows and guests and their liberality in furnishing a most appropriate room in which to hold their meetings. 3. To the newspaper press of Louisville for generous space in reporting the proceedings, and for uniform courtesy on the part of its representatives in their intercourse with the officers and members of the Association.

On motion the resolutions were unanimously adopted.

After the adoption of the resolutions of thanks, Dr. Richard Douglas arose and said: I feel that we should acknowledge our indebtedness to Dr. Potter for his tireless work as Secretary of the Association. The success of this meeting is largely due to the efficiency of his work, and I therefore move that a vote of thanks be extended to him. Seconded and carried.

INDUCTION OF OFFICERS.

Dr. Hall, the retiring President, said: We are about to finish the last session of this meeting, and I am glad to say that it has been one of the most pleasant and successful meetings in the history of the Association. It gives me no small amount of pleasure, as the presiding officer, to say that the meeting has been well attended; the discussions have been spirited, but unattended with any personalities. As I retire from this office I want to thank you all for your courteous treatment during this meeting. As the President- and First Vice-President-elect are both absent, I will call on the Second Vice-President, Dr. Goldspohn, to take the Chair.

Dr. Goldspohn, in taking the Chair, said: I certainly have never been taken with greater surprise than at this moment. Were I a humorist I might be able to occupy a few moments of your time in saying something to interest you, but I am utterly unqualified in that direction. I am without humor and without wit. I can simply sympathize with the sentiments expressed by Dr. Carstens last evening, that we meet on these occasions to have our individual extreme ideas corrected. We rub up against one another and by attrition smooth over our angularities. Personally, I need every now and then to have my extreme ideas corrected or modified by the varied amount of experience given at these meetings. If I have been a little vehement at times in expressing my opinions, or in censuring some Fellow too strongly, I hope he has received it in a charitable spirit, for there has been no disposition on my part to be in any way personal.

These meetings are exceedingly laudable. We elicit important and authentic information in regard to the most important issues that affect the suffering female race. We should strive to be guarded in our statements and not use extreme dogmatic expressions.

Our Association is to be commended for the good character of its productions in general. The scientific merit of the meetings as a whole is very commendable. I feel thankful to have the privilege of listening to the opinions of Fellows who have had a much more extensive experience than myself.

I do not expect to have anything to do in an official way with our next meeting, as my office is purely honorary, but I hope when we meet again we will have occasion to be as well pleased with the high character and scientific merit of our contributions as we have been with those presented at this meeting.

The Association then adjourned to meet in Cleveland, Ohio, September 17, 18, and 19, 1901.

Executive Sessions.

Tuesday, September 18, 1900.

The President, Dr. Rufus B. Hall, in the Chair.

The Secretary presented the reports and accounts of the Secretary and Treasurer, and asked that an Auditing Committee be appointed to report at another meeting.

The President appointed as an Auditing Committee Drs. Jelks and Douglas.

The Auditing Committee subsequently reported having examined the accounts and vouchers of both Treasurer and Secretary and had found them correct, with a balance of $105.18 in the hands of the Treasurer.

The Secretary stated that he presumed the Fellows had noticed that they did not receive the usual list of new applications for Fellowship prior to the time of this meeting, for the very good reason that the Secretary had no list. At the usual time of sending out the list he said there was no perfected application on file. Since that time a number of applications had been received and perfected. He, therefore, on behalf of the Executive Council, presented the names of the following candidates for Ordinary and Honorary Fellowships:

Honorary.—J. Knowsley Thornton, Esq., Cambridge, England.

Ordinary.—Drs. William D. Haggard, Jr., Nashville, Tenn.; E. Gustav Zinke, Cincinnati, Ohio; Charles L. Bonifield, Cincinnati, Ohio; Webb J. Kelly, Galion, Ohio, and Montgomery Linville, New Castle, Pa.

The Council, he said, had recommended the indorsement of the applicants whose names had been read.

On motion the recommendation of the Council was concurred in.

The Executive Session then closed.

Wednesday, September 19, 1900.

The Executive Session was called to order by the President at 7.30 P.M.

The Association proceeded to elect officers for the ensuing year, with the following results:

President—Dr. W. E. B. Davis, Birmingham, Ala. *Vice-Presidents*—Dr. Edwin Walker, Evansville, Ind., and Dr. A. Goldspohn, Chicago, Ill. *Secretary*—Dr. William Warren Potter, Buffalo, N. Y. *Treasurer*—Dr. X. O. Werder, Pittsburg, Pa.

Executive Council (to fill vacancies)—Dr. Edward J. Ill, Newark, N. J., and Dr. Edwin Ricketts, Cincinnati, Ohio.

Considerable discussion arose on the question proposed by Dr. Carstens of selecting a new name for the Association, after which Dr. John B. Deaver offered the following:

Resolved, That the name of the American Association of Obstetricians and Gynecologists be changed to "The American Society of Abdominal Surgeons." (To lie over one year.)

Cleveland, Ohio, was selected as the place for holding the next annual meeting; time, Tuesday, Wednesday, and Thursday, September 17, 18, and 19, 1901.

There being no further business, the Executive Session adjourned.

WILLIAM WARREN POTTER,
Secretary.

PAPERS

READ AT THE

THIRTEENTH ANNUAL MEETING

OF THE

AMERICAN ASSOCIATION

BOSTON MEDICAL
JUN 20 1901
LIBRARY.

OF OBSTETRICIANS, AND GYNECOLOGISTS,

HELD IN THE

LADIES' ORDINARY OF THE GALT HOUSE,

Louisville, Kentucky,

SEPTEMBER 18, 19, AND 20, 1900.

PRESIDENT'S ADDRESS.

THE EDUCATION OF THE LAITY UPON SEXUAL MATTERS: WHEN SHALL THEY BE TAUGHT, AND TO WHAT EXTENT?

By RUFUS B. HALL, M.D.,
CINCINNATI.

One year ago, in my absence, you did me the honor to elect me President of this distinguished body. I am fully conscious of the exalted position and appreciate the friendly spirit and kindly good-will that induced you to so honor me. This Association has become noted for the excellence of its scientific work, the truthfulness of its records, the sharp debates upon the floor, and the spirit of warm friendship that pervades its membership at all times. One who is not accustomed to attend its meetings cannot understand how such sharp debates can be carried on here with the existence of that feeling of friendship and brotherly love which is prevalent among us, until he realizes thoroughly that this is a scientific body and that all the discussions have one main object in view—that of bringing out the truth, the whole truth, and nothing but the truth.

I am certain that I voice the sentiments of every Fellow of this Association when I express our thanks to Dr. William Warren Potter, the distinguished Secretary, to whose untiring efforts the high standing of the American Association of Obstetricians and Gynecologists owes so much. Nor are we unmindful of our obligations to my distinguished predecessors, who, by their justice, courtesy, and dignity in office and wisdom in council, have guided our deliberations and smoothed our difficulties. To hold an office once graced by such as have been honored in the past is a matter of no small moment in one's life, and one that is highly appreciated by

the speaker. Allow me to thank you for the honor you have done me by electing me to preside over this Association at its thirteenth annual meeting. The associations of these years have been among the most pleasant of my life. Perhaps a true interpretation of the duties of the hour would demand that I address you by recounting the recent advances in our branch of surgery, and discuss the technique of different operations or the management of septic infection following abortion or labor. But, inasmuch as the greatest latitude is granted me, I prefer to restrict my remarks to the discussion of "The Education of the Laity upon Sexual Matters: When Shall They be Taught, and to What Extent?"

Everyone engaged in abdominal and pelvic surgery realizes the fact that pelvic inflammation in women, with all its attendant evils, is accompanied by the greatest suffering ever inflicted upon womankind. This suffering is prolonged in many instances over a long period of time, extending into months and even years, and finally ends, in a large number of cases, in the most serious operation in surgery and not infrequently in death. If the patient does recover from the operation she is maimed for life. She has been deprived of her ovaries. She has been grievously sinned against. We know that this disease, which has entailed so much suffering, could be prevented, in a very large percentage of the cases, if the parties most interested were possessors of the knowledge which is due them. When we consider the large number of innocent women, victims of pelvic inflammation on account of their ignorance, who pass through the hands of the gynecologists annually, it does not seem right that we should never raise a voice in their behalf. There is something wrong with society at large or the medical profession is derelict in its duty. If the latter is true, it is time the profession should make a great effort for the prevention of these diseases. You will ask how this is to be brought about. It will require many papers upon this subject and repeated discussions before any well-grounded plan is formulated and carried forth by the profession to the point of producing good results.

I am certain if a society like this would indorse these sentiments in an emphatic manner it would exert a great influence upon the profession at large, and it would not be long before the good effect of this teaching would be apparent. In the papers and addresses read by Fellows of this Association before societies composed of

family practitioners, the prevention of pelvic inflammation should be given prominence until the whole profession is as well informed on this topic as we are. The family physician must be the educator of the people in this direction. And when he gets the indorsement and is sustained in his position by the specialist, his influence will be greatly strengthened and widened. Great good could be accomplished in this direction by the education of the laity upon sexual matters. But the questions arise, When shall they be educated, and to what extent? I am aware of the fact that these are difficult and delicate questions to answer, but this should not deter us from our duty. I fully appreciate the fact of the great delicacy and hesitation on the part of parents to talk about these subjects to their sons and daughters. When we realize this fact the greatness of the subject begins to dawn upon us. But this is a just and righteous subject and one that is bound to be thoroughly aired by the laity in the near future. In a paper presented to this Association in 1895 I called attention to this fact. I believe now, as then, that the sooner the medical profession does its plain and whole duty in this matter the better for us all. I believe that many honest, conscientious, well-meaning citizens would rebel at the thought of educating the youth along these lines, yet this does not relieve us of our responsibility. They have been made to believe that no person except physicians should know anything about the sexual function except as they learn it by accident. This is all wrong, and to this wrong teaching many of the calamities spoken of could be credited. Knowledge is power in this as in every great undertaking in life. It will only be necessary to disseminate the information that pelvic suppuration is preventable, and a great advance in the right direction will have been accomplished. This knowledge would do good in two directions. First, if young men knew that they would be held responsible in after-life if they should contract gonorrhea, they would not take the risk of contracting it. Second, if young women knew the risk they incurred in marrying a man with loose habits, they would look more carefully into his past life and would not marry rakes, as so many of them do now.

I would advise that during the last year in high school, in every school in this land, a text-book should be employed embracing embryology, hygiene, anatomy, and physiology, including sexual

physiology, and that these subjects be taught to every student, both male and female. This could be accomplished, without shocking the morals of the most susceptible or fastidious individual, by dividing the classes so as to separate the sexes. A female teacher should teach the girls, and a male teacher the boys. This is the very time in life when individuals should be taught to know the functions with which a wise Providence has endowed them, and how to care for their bodies as well as their minds. They should study the sexes of the flowers in their botany and be made to know their meaning, which they are not made to understand now. It would be a revelation to them to know that the sexual organs, in animals as well as the human race, are among the first centers to be formed, and can be recognized as such early in intrauterine life. This knowledge of the early development of the sexual organs could be gained by the study of their development in animals. For instance, take the chick, for the sake of convenience. The centers from which the sexual organs are developed appear in the early half of the second day after incubation. In the rabbit they appear as early as the eighth or ninth day ; in the human fetus as early as the fourth week, and the sex can be determined at the end of the ninth week. No study could be more fascinating or interesting to intelligent young people than the one under discussion, and none could yield a richer return to the State and to the morals and health of the community.

These facts are not new to doctors, and are only mentioned here to show the importance of the subject under discussion, and to emphasize that nature has designed the sexual organs to be a prominent and essential part of the human body, and they should be cared for as carefully as the brain, heart, lungs, or any other part of our bodies.

In discussing this subject privately with some of my medical friends, they intimated that such knowledge disseminated among young people would greatly increase the social evil in the land. I believe that just the opposite would be the result. It is known to be a fact that the young men who lead vicious lives form the habit while they are young, many of them in their 'teens, and the vast majority before they are twenty-one years of age. Another fact known to physicians is that not one in a hundred of these men know what a serious disease gonorrhea is before they are the sub-

ject of it. The subject of "clap" is treated as a huge joke among young men and boys, and not given the consideration it deserves.

The popular belief among the laity is that gonorrhea is a disease that hurts no one, except temporarily, and when they are cured of their discharge, which they believe can be done in two or three weeks, they are perfectly well. The prevalent opinion among the laity is that a young man can have this disease and get well in a few months, and I am sorry to say not a few physicians believe this also. If we could educate these young men, and let them know what a serious disease gonorrhea is, how it clings to them in after-life, and if they marry how likely they are to infect their wives months or even years afterward, this would have a great influence in preventing them from forming these vicious habits.

This knowledge could be imparted very easily by a few lectures upon bacteriology, by demonstrations with the microscope or with the use of lantern-slides. These demonstrations should include the staphylococci, streptococci, and gonococci. These young men all know, long before they reach this period of life, that there is such a disease as "clap" or gonorrhea. But the difficulty heretofore has been that they have received their knowledge through wrong channels—public gossip—and their teacher was, therefore, not well informed as to the serious nature of the malady. Disseminate the knowledge early in life to every youth in the land that "clap" is more dangerous than syphilis, and great good will be accomplished at once. They should know that once they are infected it may require years of careful treatment to effect a cure; that many remain uncured during the remainder of their lives; that a great many who believe themselves well infect their wives years after they supposed themselves cured, conveying a deadly disease to the one they had promised to love, cherish, and protect. This disease may and frequently does cause death, or, what to many a young wife is worse than death, destruction of her sexual organs, blighting her household and happiness. I have enough confidence in human nature to believe that if we could educate the rank and file of American youth upon this important subject (the danger of infection and its consequences) before they have commenced leading profligate lives, we could prevent a great many men from indulging in this vicious habit, and thereby add a great blessing to them and the State. Let them know the real danger as we know it,

and it would be rare indeed that a man would thus deliberately take the risk of contracting the disease.

If I were to tell you the expressions of sorrow, chagrin, and surprise that I have received from some of these young men after it is too late to be of service to them or their wives, I would only be repeating the tale of woe that you have all heard time and again. How often we see a young woman who has always enjoyed perfect health previous to marriage, and menstruated without any inconvenience more than a slight discomfort, soon after her marriage to a man who has been the subject of gonorrhea, but now believes himself cured, give a history something like this: Within three weeks after marriage she commenced to complain of pelvic pain and vaginal discharge. She gradually grew more and more incapacitated each week for any active muscular exertion. And, if the case progresses rapidly, within three or four months she is an invalid with suppurating tubes or ovaries, or both, and the only means of saving her life is a serious surgical operation involving the sacrifice of her ovaries and tubes. Not infrequently this fails to save her life, because not a few of these acute cases die under the hands of the best man in the world. All of you can recall more than one case every year. More frequently we meet cases that extend over a longer period of time. The woman first suffered with a slight vaginal discharge, with perverted and changed type of menstruation. The flow became more profuse and prolonged, with more suffering before, during, and after menstruation than ever before. After a year or two she has an attack of pelvic inflammation one or more times a year until she becomes a chronic invalid. She may have been under the care of her family physician and had the very best care and treatment that could be bestowed upon her, yet the disease grows worse, until she is bedridden, and the specialist is asked to see her. He finds a well-defined tumor at one or both sides of the uterus, with that organ fixed in a mass of adhesions. To relieve the poor sufferer he advises an operation for removal of the diseased organs. This may be three, four, or five years after her marriage, yet the origin of the disease dates to within three weeks of her marriage and is due to gonorrheal infection.

I have had the husbands of these women say to me, with tears in their eyes, time and again, that they had been told by their

physicians that their "clap" was well, that they could not infect anyone, and their disease would give them no trouble in the future. Many of them have said to me that they had not been exposed to the disease for years before marriage, yet they infected their wives just the same.

If these were rare or isolated cases we would not feel the necessity of raising our voices against this great evil; but you, gentlemen, every one of you, know that they are not rare. Think of the number of women suffering from pelvic inflammation who pass through the physician's hands every year, and also the large number who pass through the hands of the gynecologist who are compelled to submit to a section to save their lives, largely on account of the ignorance of the laity upon this subject, and you will agree with me that it is time something was done to protect these innocent women! These facts make it incumbent upon the medical profession to disseminate the knowledge that will correct this evil and right the grievous wrong that is inflicted upon innocent and confiding young women all over this land.

Just how much should be taught to young women is a difficult question to decide, but enough could be taught by a few lectures, with lantern-slides and microscopical demonstrations of the various modes of infection and the havoc wrought in the sexual organs of women from inflammation, to set them thinking upon this matter without offending their sense of propriety. And enough ought to be taught to emphasize the danger of septic infection following retained decidua in abortion. Let these young ladies know before they are married what danger they incur from infection following abortion, and it would be rare indeed that a woman who has not a crime to conceal would consent to have an abortion produced or even attempted on her own person. It could all be covered in one short chapter in a text-book, and would do more to prevent criminal abortion in married women than all the moral suasion in the world. To contend that this is a subject that should not be spoken of except to married people is shifting the responsibility. It is a well-known fact that boys and young men speak of this subject to each other and talk about the matter in an ignorant sort of a way; but it is very doubtful whether young women have much knowledge upon this subject. If this subject were properly taught in the last year of high school, as suggested, it would do more in

ten years' time to correct the social evil, the evils of criminal abortion and of gonorrheal infection among young men and their wives, than has been done in the past hundred years.

When the laity become educated upon this subject as they should be, and understand the meaning of pelvic inflammation in young wives as we understand it, the parents and guardians of young girls will realize that they owe them a duty before consenting to their marriage. When this time arrives the parents and guardians of young girls will be as careful to inquire after the moral habits and the social character of their daughters' suitors as they are now wont to do about the size of their pocket-books. They will not consider their daughter well married if she marries the son of a millionaire or a promising young lawyer or doctor, if she is to be subject to pelvic inflammation from infection within a year after her marriage. In fact, they will consider it more important that the prospective husband of their daughter be a morally clean man than that he be the son of a millionaire. When the laity become educated as they should be, the abdominal surgeon will make fewer sections for this preventable disease than he is now making, and a corresponding amount of misery and death will be prevented.

ERRONEOUS OBJECTIONS TO BILATERAL INGUINAL CELIOTOMY AND SHORTENING OF THE ROUND LIGAMENTS *VIA* THE DILATED INTERNAL INGUINAL RINGS, AND ITS SUPERIOR ULTIMATE RESULTS IN SIMPLE AND COMPLICATED ASEPTIC RETROVERSIONS OF THE UTERUS.

By A. GOLDSPOHN, M.D.,
CHICAGO.

For a detailed statement of the technique of this operation and its *rationale* the writer respectfully refers the reader to his articles in the following issues of journals in which it has been given: *American Gynecological and Obstetrical Journal*, February, 1898; *New York Medical Record*, October 8, 1898; *American Journal of Obstetrics*, vol. xli., No. 5, 1900.

The salient points in his technique and some of the reasons for them are the following:

1. Distinct exposure of the real (and not merely the apparent) external abdominal ring and grasp of its contents in a forceps, as the most important and useful key to the finding of the round ligament.

2. Abstaining from all cutting of tissues after that, with minor exceptions. The aponeurosis of the external abdominal oblique muscle is never cut, but always split open bluntly in the direction of its fibers, outward and in more of an upward direction than is the course of the inguinal canal. The inconvenience of this is merely apparent, for the lower edge of the severed aponeurosis is readily drawn down or everted by means of a forceps, and good access to the inguinal canal is thus obtained. This sacrifices none

of the future holding capacity of this most important structure. It affords a broader and better surface posteriorly against which to anchor the round ligament, along with enough of the internal oblique and transversalis muscles to occlude the canal and make hernia impossible, and the severed edges of the aponeurosis are thereby permitted to fall into exact apposition again, because nothing comes in between them. They are exactly reunited, and the lines of union of this and the preceding (second) layer are not parallel nor over each other, which is of value, because these two layers, in the Bassini procedure, have everything to hold. It is equally uncalled for to incise the internal abdominal ring, because an opening from 3 to 5 centimeters is usually obtained easily by stretching it with fingers or a forceps, beginning with a small opening in the peritoneal envelope of the ligament, that is always made by stripping it back if the ligament, in any simple Alexander operation, is at all properly shortened. Thus, no more sacrificing of these structures is made in the writer's addition of intraabdominal work to the Alexander operation than is made for the latter alone.

Again, the opening mentioned is sufficient for the intrapelvic work intended, because the internal abdominal rings are just in front of the normal location of the ovaries and ampullæ of the tubes ; wherefore these structures and the posterior surface of the uterus are as easily reached by this route with one finger through a one-inch opening, as by two fingers introduced through a two-inch incision in the linea alba midway between the symphysis pubis and the umbilicus. Moreover, as the inguinal opening is exactly in front of the anterolateral wall of the pelvis—the normal location of the ovary—it and the abdominal end of the tube can be drawn into or out of the dilated internal ring more naturally and with greater facility than into or out of any other abdominal or vaginal opening whatsoever. The highest degree of fine and exact work in salpingostomy, resection of the ovaries, and shortening of the most important and delicate support of the ovary, its lateral suspensory ligament (ligamentum infundibulum pelvicum), can all be made most readily from this approach. Such delicate work upon these structures is utterly impossible by any vaginal route (which induces descensus of ovaries, but can never cure it) ; and if such work upon these delicate organs is to be done *via* the linea

alba without doing violence to their lateral supports, and if these important supports are to be made short enough to hold the ovary, etc., in its *only natural* position, against the anterolateral wall of the true pelvis, then the incision in or near the linea alba will have to be a long one and necessarily involve much exposure of serous surfaces and travelling over intestines in order to deal properly with the structures upon the lateral wall of the pelvis.

The celiotomy feature in conjunction with the Alexander operation, to the extent of dilating the opening in the peritoneum and the internal ring sufficiently for exploration of the internal organs by means of one finger, is advantageous on each side of all simple cases, and is necessary in all complicated cases, for the following reasons:

1. To prove that the round ligament really pulls from the uterus when it has been shortened apparently *ad maximum* by extra-abdominal dissection and traction, and not from the middle or outer half even of the broad ligament, as is the case in about two-fifths of all round ligaments in even simple movable cases. This fact probably explains the singular observation of Krönig and Feuchtwanger[1] in two cases of extreme retroversioflexion, in which moderate traction upon the round ligaments anteverted the uterus, but severer traction threw it over backward.

2. Exploration within is necessary to find out obscure fixations and degenerate conditions in or upon the adnexa, that are far more frequent than real adhesions to the uterus itself, and can frequently not be discovered by the most careful and skilled examinations. These have often vitiated the results, as to perfect health, after the simple Alexander operation heretofore, and will continue to do so, especially when no more thorough work is performed than that which is proposed by operators who speak in favor of one-inch incisions; of not opening the inguinal canal; of not opening the peritoneum, and similar vagaries of superficiality.

3. To extend also to the much larger category of adherent and otherwise complicated retroversions, in probably fruitful women, the greatly superior good of treatment by shortening of round ligaments approximately in their natural channels, which is the only procedure that has so far been proved to be able or likely to cure their displacement for life—*i. e.*, not merely until their next baby comes—as a temporary makeshift—but also after successive subsequent labors at term.

The wound is closed in four layers, of which the second and third are of chief importance, as before mentioned. In the first layer the edges of peritoneum and margins of the internal ring are caught in a puckering-string suture which closes that opening. In the second layer the internal ring just closed is covered over, and the canal is closed by liberal masses of muscle tissue from the internal oblique and transversalis, by means of from five to seven continuous catgut stitches taken from the extreme outer angle of the cleft in the aponeurosis successively inward to near the pubic spine. The first two or three of these stitches are taken laterally from the point of emergence of the round ligament and reinforce the abdominal wall over the closed internal ring ; but by each of the remaining three to five stitches toward the median line, the round ligament is pierced at about its center and becomes placed as in a sandwich between the elastic and vascular muscle tissue and the posterior surface of Poupart's ligament, and it is thereby secured from strangulation. Three very important things are obtained by this technique in the second layer: (*a*) The ligament is broadly anchored against Poupart's ligament as an unyielding object, without compromising the continuity of the aponeurosis, as happens when the ligament itself is used as a suture in closing the aponeurosis ; (*b*) the roll of elastic muscle tissue in each stitch secures the ligament from strangulation ; (*c*) the internal ring and the inguinal canal are so closed and reinforced in such a manner as to make hernia quite impossible. The abundance of tissues available in these cases, and the liberty with which we can sew them in a woman, where there is no spermatic cord to look out for, makes hernia certainly a most rare sequel of this operation in normal hands, and when it does occur it must be charged to the operator and not to the operation. Krönig and Feuchtwanger (of Prof. Zweifel's clinic) report two small herniæ in 136 inguinal sections. J. Schultz[2] (Prof. Kümmel, *Allgem. Krankenhaus*, Hamburg) found not even the slightest weakness or approach of a hernia in any of his 54 cases that were carefully examined ; Rumpf[3] (Berlin), not any sign of hernia in 60 cases examined, aside from a number that reported by letter, and he believes it safe to assume that there is no hernia in any of his cases. Edebohls[4] had a hernia develop in both wounds of one patient out of 106 that were examined. The writer has one impending hernia to record—in a

patient who slid down an icy stairway upon her buttocks five weeks after operation—out of 123 patients, of whom he or other physicians examined 101 cases over a year, on an average, after operation, and the remainder sent reliable reports by mail or by messengers. Furthermore, all operators who have any extended personal experience with the Alexander operation of *today* are unanimous in the opinion that hernia does not *now* follow this operation in qualified hands (say such as can operate for hernia effectually), except as rare and accidental occurrences, and all assertions to the contrary are made by men who have no adequate personal experience with this operation, and are usually advocates of some other operation that has never stood the double test of pregnancy.

Equally void of fact are the statements that the round ligaments are sometimes absent, and that they can frequently not be found, or only with great difficulty, and that they are too feeble to serve really. Confirming the declarations of most of those operators who have learned how to find the round ligaments, the writer can say that, after his initial pupilage upon the round ligaments of a dozen dead women, he has never failed to find both ligaments in each of at least 190 living subjects operated upon. These comprised in the first place over 75 simple Alexanders, and subsequently 114 cases of his own operation in which the bilateral celiotomy feature was added. But he has traced one ligament from within the pelvis outward in four cases, with most benign results to the patients. In women whose uteri are composed not merely of rudimentary cornua, the round ligaments *are always present, can always be found,* and can practically always be developed strong enough surgically by reinforcement with adherent peritoneum to permanently poise the uterus in anteversion, as its state of stable equilibrium. But whether they will also serve in a new rôle—*i. e.*, for suspension of the uterus—remains to be proved. In this capacity they are called to serve in the procedures devised by Carl Beck,[10] New York; A. H. Ferguson[11] and D. T. Gilliam,[12] and partially so in the Kocher modification of the Alexander operation, in which the ligaments are sewed upon the aponeurosis in a direction toward the anterior-superior iliac spines. This suspending rather than merely poising of the uterus by the round ligaments, together with the fact that most of their cases

were operated for prolapse, the writer believes to be the reason why, in Krönig and Feuchtwanger's report, 3 recurrences of retroversion occurred out of 18 cases of simple Alexander operations, and also why they are the only ones who have met a recurrence of retroversion after subsequent labor, which they recorded to have been the case in two out of nine such cases examined. The writer has regarded prolapsus uteri of more than the first degree usually as a contraindication for this operation, because the marked elongation of the sacrouterine ligaments which is present in those cases makes poising forward of the uterus by the round ligaments illusory, and converts any shortening of these ligaments into a suspension by them, for which they were certainly not intended. But when prolapsus uteri occurs in younger, fruitful women, which is much more frequently so in Europe than here, then the most auspicious treatment is by thorough vaginal plastics and a round-ligament suspension of the uterus; whereas, for prolapse in probably unfruitful women it is much better to associate the vaginal operations with either a thorough vaginofixation or ventrofixation of the uterus.

The operation has practically no mortality. In 114 cases of the writer's inguinal celiotomy and over 75 previous cases of thorough Alexander operation—associated in a large majority of all the cases with from one to three plastics—the writer has had no death ascribable to the bilateral inguinal celiotomy as such; diabetes mellitus in one case was not discovered owing to a fatal interchange of samples of urine by a nurse, and the patient was subjected to a long ether narcosis and a series of operations, and died in forty-eight hours afterward. And six to seven other operators have performed a hundred or more consecutive Alexander operations with either no death, or approximately 1 per cent. in cases where a long series of operations was performed.

Diagnosis. This operation is pre-eminently a gynecologic one, because it presupposes a gynecologic diagnosis to have been made, not merely as to the topography of the parts, but also as to the presence or absence of septic accumulations—a subject that is treated too laxly in general by some American operators. However, this is no impossibility nor a hardship, but merely a reasonable requirement, when, as here, much of the remote future welfare of the patient depends upon such a previous diagnosis. This

degree of skill in bimanual palpation and tactus eruditus in operating without constant sight, is only a normal requirement of anyone who claims to be specially fitted for the surgical treatment of female pelvic disorders. The fact that we certainly cannot make even approximately correct diagnoses in some cases does not give us a license to operate in a larger number of cases, also without a diagnosis. As a rule, the patient is entitled to know beforehand both the degree of danger involved in the operation and also what health she will probably enjoy and what she will be capable of after any given operation, before she accepts it, and an approximately correct diagnosis only will enable the operator to discharge this first duty to his patient. However, there are cases of retroversion with adhesions and diseased adnexa in which tenderness at first is very great, so that septic accumulations cannot at once be ruled out nor recognized to be present. These the writer consigns to complete and constant recumbency for ten or fourteen days, with daily saline laxatives, suitable diet, two or three very large and very hot vaginal douches daily, and with thick, hot fomentations that envelop the whole abdomen and sides, are renewed every twelve hours, and are carefully covered successively by oiled silk, common cotton, and a generous flannel bandage over all.

With this treatment many ominous-appearing features will clear up. But if any tumefactions or indurations retain their former exquisite tenderness to touch, there is probably pus or its equivalent present, and the inguinal route or celiotomy of any kind without sight should not be chosen. *The scars* are usually a matter of indifference to the patient, because it is quite true what Burrage says, that because of their position in the fold of the groin they show much less after a year than any incision in the median line or on a convex portion of the abdomen. And when patients are given honestly to understand the life-tenure of service afforded by this operation as compared with the uncertain and temporary service of all the equally harmless vaginal procedures, it is also true what H. Kreutzmann[13] says, that only those who make merchandise of their bodies will object to these scars.

TABLE OF AUTHOR'S 22 CASES OPERATED DURING EIGHT MONTHS.

No. Age. Para (?).	Anatomical diagnosis at the time of operation.	Operations performed *in addition* to shortening and anchoring the round ligaments. Date.	Nature of the convalescence from operation.	Date of last examination, and position and condition of the pelvic organs.	Unmarried or pregnancy.	Concomitant causes of impaired general health, and occasional treatment since operation.	Authentic recent reports of subjective condition in general.
1. 30 years. Nullipara.	Metritis; marked retroversion, movable; very large multicystic and descended ovaries; pessary not borne; neurasthenia.	Curetment and packing of uterus; resection of both ovaries; exsection of large follicle and corpus luteum cysts. January 2, 1899.	Afebrile; perfect primary union.	July 17, 1899, uterus; markedly anteverted, but tender to bimanual touch; ovaries hardly accessible; left one tender and cause of side-ache at times.	Unmarried.	Had acute and sub acute rheumatism for 2 to 3 months after leaving hospital; declined to take medicine properly; is partly given to "faith cure." Neurasthenic insomnia and dysmenorrhea continue. July 17, 1899.	Aug. 15, 1900. Is about in the house and takes walks; is well nourished, but is afflicted with insomnia, nervousness, and dysmenorrhea.
2. 31 years. III.-para + abortion.	Metritis; retroversion; extreme, movable; painful cirrhotic left ovary; right ovary with follicle cysts and adherent, not so painful; lacerated perineum.	Curetment and packing of uterus; removal of left tube and cirrhotic ovary; resection of right ovary; posterior kolpoperineorrhaphy. January 9, 1899.	Afebrile; comfortable; complete primary union.	Sept. 10, 1900. Uterus somewhat large, but in good anteversion; no tenderness of uterus or adnexa; slight laceration of perineum.	Chid two months old; ten pounds at birth.	Four previous labors lasted 24 to 36 hours; is surprised at this birth taking only 2 hours and without assistance.	Sept. 10, 1900. Patient doing light housework and nursing child; is somewhat weak she says, but feels well.
3. 21 years Nullipara.	Endometritis; marked retroversion, movable; adherent cystic right ovary; left ovary removed elsewhere two years previously by ventral celiotomy.	Curetment and packing of uterus; right ovary liberated and resected. January 9, 1899.	Complete primary union.	Aug. 22, 1900. Uterus in normal position and mobility; catarrhal; eroded os; vaginitis; right ovary little descended and tender; small painful cystic body in left broad ligament; admits onanism.	Unmarried.	Tender stumps and cystic swelling in left broad ligament. Onanism.	Aug. 22, 1900 Complains of frequent pains in both sides and back; dysmenorrhea; is nervous, but well nourished.
4. 31 years. Multipara + abortion.	Metritis; severely adherent retroversion; cystic and cirrhotic ovaries; left one adherent; complete laceration of perineum and sphincter ani; anemic.	Curetment; left ovary and tube liberated and removed; right ovary resected and suspended; perineoproctorrhaphy. January 10, 1899.	Complete primary union of all except last one or two stitches in sphincter ani.	Aug. 20, 1900. Uterus anteverted, movable; to bimanual palpation little soft and enlarged; not much tenderness after recent abortion; right ovary normal; full use of sphincter ani.	Recent abortion of three months after a fall.	Former anemia from excessive menstrual losses now partly renewed by hemorrhage in abortion.	Aug. 20, 1900. Some weakness, otherwise the patient feels well; has no pains or real discomforts.

5. 37 years. I.-para.	Chronic metritis; pathologic cervix; mobile retroversion of uterus, but descended adherent adnexa; lacerated perineum.	Curetment, Schröder cervix operation; liberation of both tubes and ovaries; resection of left ovary, January 30, 1899. Also "intrapelvic infravaginal perineorrhaphy without loss of tissue."	Afebrile course and complete primary union.	Aug. 14, 1900. Uterus in typical anteversion; ovaries in ideal lateral locations; all organs freely movable and entirely void of tenderness.	.....	Anemia; tonics; soon resumed her housework.	Aug. 14, 1900. Pelvic and general health quite perfect; former intense and constant backache entirely gone; dyspepsia also.
6. 21 years. Nullipara.	Congenital marked retroflexion movable; descended cystic ovaries; endometritis; hemorrhagic cystitis.	Cystoscopic examination of bladder and 5 per ct. solution of arg. nitrate applied. Curetment; resection of both ovaries and suspension of left ovary. February 11, 1899.	Nearly afebrile course and complete primary union.	Aug. 15, 1899. Some vesical irritability; no corpuscular elements in the urine; uterus and ovaries in normal position and condition.	Unmarried.	Had irrigations of bladder every second day in hospital and one to two times a week out of it for about two months; menses at same time scanty, but painless.	Aug. 19, 1900. Is generally well, aside from some irritability of the bladder and a "weakness" and diffuse pelvic pain before menstruation: intends to be married soon.
7. 24 years. I.-para.	Hemorrhagic endometritis; extreme retroversion of uterus, movable, with cystic ovaries, left one much descended; lacerated perineum; anemic; severe dyspepsia.	Curetment and packing of uterus; resection of both ovaries; intrapelvic infravaginal perineorrhaphy. February 20, 1899.	Primary union of inguinal wounds, but suppuration in infravaginal wound, and temperature for ten days.	Aug. 11, 1900. Ideal position of all pelvic organs, with normal condition; no tenderness anywhere nor pain at any time.	.....	Anemic; tonics and two intrauterine applications of tincture of iodine with syringe applicator in office.	Aug. 11, 1900. Boasts of her good health, feeling and strength no leucorrhea; menses normal.
8. 30 years. Multipara.	Retroversion, adherent; lacerated cervix; endometritis; right tubal swelling; lacerated perineum (round ligaments had been shortened and left ovary and tube removed a year previously by ventral celiotomy; a baby came and spoiled it all.)	Curetment; trachelorrhaphy; removal of right (only remaining) tube with a small, unruptured tubal pregnancy; suspension of right ovary; intrapelvic infravaginal perineorrhaphy. March 13, 1899.	Perfect primary union in all wounds; afebrile course.	Sept. 6, 1900. Position and condition of uterus and remaining ovary normal.	.....	Two intrauterine tincture of iodine applications with syringe applicator and temperature douches to reduce subinvolution during first month out of hospital.	Sept. 6, 1900. Very good general and pelvic health; working hard every day.
9. 24 years. Nullipara.	Congenital marked retroflexion, movable; large, descended, globular ovaries; severe vesical tenesmus without other evidences of cystitis.	Inspection of bladder negative. Curetment; resection of both ovaries. March 16, 1899.	Afebrile; entire primary union; no more vesical tenesmus at leaving hospital.	Aug 22, 1900. Position and condition of uterus and ovaries normal: no excessive anteversion; no tenderness anywhere.	Unmarried.	Two recurrences of "irritable bladder" subsided upon two to three séances of gentle application of extrauterine vaginoabdominal faradic current, but during March, 1900, was sick and treated for what was claimed to be cystitis.	Aug. 22, 1900. Has some vesical irritability only before menstruation, which is normal, no leucorrhea; general health very fair.

No. Age. Para (?).	Anatomical diagnosis at the time of operation.	Operations performed *in addition* to shortening and anchoring the round ligaments. Date.	Nature of the convalescence from operation.	Date of last examination, and position and condition of the pelvic organs.	Unmarried or pregnancy.	Concomitant causes of impaired general health, and occasional treatment since operation.	Authentic recent reports of subjective condition in general.
10. 30 years. Nullipara + 3 abortions.	Metritis; retroversion of uterus, movable; adherent right tube and ovary conglomerate; globular left ovary.	Curetment and packing of uterus; removal of right degenerated ovary and closed tube; resection of left ovary. April 13, 1899.	Superficial suppuration of both wounds, and some temperature.	Aug. 14, 1900. Position and condition of uterus very good; left remaining ovary negative.	.....	.....	Aug. 14, 1900. Menstruation normal; no leucorrhea; general health excellent, but the much-desired pregnancy has not yet come.
11. 32 years. Multipara.	Chronic metritis; retroversion of uterus adherent; adherent right tube and ovary; lacerated perineum; hystero-epileptic attacks.	Curetment and packing of uterus; removal of right tube and ovary; intrapelvic infravaginal perineorrhaphy. May 11, 1899.	Afebrile and complete primary union.	Aug. 18, 1900. Married three months ago; an abortion six w'ks ago; uterus now a trifle large and tender, but in perfect anteversion; left ovary tender to touch and coitus.	Abortion at six weeks.	Had no more epileptiform attacks since operation, but took ferri sulphas, asafetida, and ammonii valerianas two months, and general nervousness improved.	Aug. 18, 1900. Is in good general health, although nervous; has gained much in weight and strength
12. 33 years Nullipara.	Marked retroflexion of movable uterus; endometritis, hemorrhagic; descended, adherent, cystic right ovary preventing use of pessary.	Curetment and packing of uterus; removal of right tube and ovary. May 15, 1899.	Primary union and no temperature.	Sept. 6, 1900. Uterus well anteverted and void of tenderness; left (only) ovary somewhat globular and a little tender.	Unmarried.	.....	Sept. 6, 1900. General health good; menstruation normal; occasional pain in left side; is a busy physician.
13. 24 years. I.-para.	Adherent, retroverted, and subinvoluted uterus in subacute metritis; subacute pelvic peritonitis (puerperal) and adherent left tuboovarian conglomerate. Temp. 101° in the evening.	Curetment; removal of left tube and ovary (septic?); resection of right ovary; intrapelvic infravaginal perineorrhaphy, May 1, 1899. Some hemorrhage from a wounded vein on left side.	During second week temp. 103° in the evening from late and deep-seated suppuration; subsided after opening of wound.	Aug. 28, 1900. Position and condition of uterus and right ovary normal; no tenderness anywhere; slight leucorrhea.	.....	In feeble general health from living in very poor surroundings, nursing a child, and being afflicted for several months with pulmonary tuberculosis (probable).	
14. 20 years. Nullipara.	Retroversion, slightly movable; adherent, firm tuboovarian swellings on both sides without exquisite tenderness; cystitis.	Curetment; removal of tubercular, closed tubal abscesses with thick walls and thickened, cheesy pus, by enucleation without rupture; one size of thumb and the other of an index finger. May 22, 1899.	Afebrile course; primary union, but a very obstinate cystitis.	Aug. 20, 1900. Uterus small, anteverted, void of tenderness and discharge, but bladder tender on bimanual palpation, and left kidney very tender; urine now clear.	Unmarried.	Patient is clearly a tubercular subject and in feeble condition from the persistent urinary affection and from repeated suppurating lymph glands on the neck.	

15. 25 years. I.-para.	Retroversion; adherent cystic ovaries; pathologic laceration of cervix; lacerated perineum.	Curetment; Schröder cervix operation; resection of both ovaries; intrapelvicinfravaginal perineorrhaphy. May 22, 1890.	Afebrile course; primary union; perfect primary union.	Sept. 6, 1900. Short, stubby, hard uterus in moderate retroversion and tender; right ovary adherent, swollen, and tender.	.....	Patient says that, aside from minor occasional pains, her health was fair until three months ago; since then has dysmenorrhea and pain in right side and back much of the time.	
16. 29 years. Nullipara.	Mobile retroversion of an imperfectly developed uterus, with stenosis of cervical canal; descended cystic left ovary.	Wide dilatation of cervical canal; curetment and solid packing; resection of right ovary. May 29, 1899.	Afebrile; complete primary union; little bronchitis.	Sept. 13, 1900. Position and condition of organs ideal; no tenderness; no leucorrhea.	.....	.....	Sept. 13, 1900. Pelvic functions wholly normal: is robust and enjoys perfect general health aside from an occasional headache.
17. 20 years. Nullipara.	Congenital retroversion, mobile; cystic descended ovaries; extreme dyspepsia and backache.	Curetment of cervical canal only; plastic on introitus vaginæ; resection of both ovaries. June 22, 1899.	Perfect primary union.	Sept. 12, 1900. Position and condition of pelvic organs normal.	Unmarried.	Menstruation excessive two months after operation; two intrauterine tincture of iodine applications with syringe applicator; during last three months afflicted with subacute endocarditis.	Sept. 8, 1900. Is quite robust; no dyspepsia since operation; menses normal; no leucorrhea; some backache before menses; valvular heart lesion nearly gone.
18. 31 years. Multipara +abortion.	Endometritis; retroversion of the uterus, moderately movable, but appendages of both sides very adherent; left ovary cystic; constant pelvic pains; backache and severe dysmenorrhea.	Curetment and packing of uterus; resection of left ovary and liberation of right tube and ovary. June 26, 1899.	Late suppuration of wound of one side.	March 2, 1900. Position of uterus and ovaries very good; condition likewise, aside from tenderness of right ovary, chiefly at menstrual times.	Reported to be pregnant 2 to 3 months.	Sept. 1, 1900. Patient has been roving from one doctor to another and to some quacks for treatment, chiefly for pain in the chest and a throat affection.	Does her housework, but complains of throat and chest symptoms; thinks she has consumption; is hysterical; has some pelvic pains and is probably pregnant two to three months.
19. 25 years. Nullipara.	Endometritis; retroflexion, adherent; descended ovaries; left one large, globular; severe dysmenorrhea, and backache constant.	Curetment; removal of left tube and ovary; resection of right ovary and suspension of same. July 15, 1899.	Late suppuration of one side.	Aug. 24, 1900. Position and condition of uterus and remaining ovary good, aside from some tenderness of ovary; no leucorrhea; some renal insufficiency.	.....	Patient has had marked and constant backache for several months, found to be in muscles of back; relieved by salicylic, soda, potassium iodide and "thialion," and several applications of galvanism to right ovary.	

No. Age. Para (?).	Anatomical diagnosis at the time of operation.	Operations performed *in addition* to shortening and anchoring the round ligaments. Date.	Nature of the convalescence from operation.	Date of last examination, and position and condition of the pelvic organs.	Unmarried or pregnancy.	Concomitant causes of impaired general health, and occasional treatment since operation.	Authentic recent reports of subjective condition in general.
20. 30 years. Multipara.	Metritis; pathologic laceration of cervix; retroversion, with marked adhesions of uterus and adnexa.	Curetment; Schröder cervix operation; removal of left tube and ovary; resection of right ovary. November 23, 1899	Afebrile; complete primary union.	Aug. 2, 1900. Position and condition of uterus and right ovary very good, but tenderness of stump on left side, and backache.	.....	Pain on left side and backache relieved by vaginoabdominal galvanic current applied fifteen minutes seven to eight times and internally "thialion."	Aug. 2, 1900. Is quite robust, having gained in weight; does her housework, but has some pain with menstruation and occasionally on left side of pelvis.
21. 20 years. Nullipara.	Marked retroversioflexion; congenital and movable; large cystic, descended right ovary, but disabling pain from left cirrhotic ovary.	Curetment, removal of left cirrhotic ovary; resection of ovary, cystic, size of hen's egg. December 12, 1899.	Perfect primary union.	Aug. 13, 1900. Uterus in ideal position and condition; right (only) ovary not easily reached; no tenderness and no leucorrhea.	Unmarried.	.....	Aug. 13, 1900. Patient glories in perfect health and is very thankful; has gain'd much in weight; works hard; has no discomfort anywhere or at any time; menses regular and normal.
22. 21 years. Nullipara.	Endometritis; retroversion extreme and movable; large globular ovaries; extreme vaginismus, dysmenorrhea, and dyspareunia; scanty urine.	Vulvar stretching and plastic operation; curetment; removal of left ovary and tube; resection of right ovary. December 30, 1899.	Uremic manifestations; late suppuration of one side, and temp. 103° for about ten days.	Aug. 11, 1900, examination just after menstruation; uterus in normal anteversion; little tenderness of uterus and ovary.	.....	.....	Aug. 11, 1900. Does her housework; little pain with menses only; vaginismus and dyspareunia nearly gone; some little recurrences of cystitis.

The preceding table states the most important features of each of the 22 cases operated upon by the writer during the first eight months, chiefly, of the year 1899. The dates are given of the operation and of the last subsequent actual examination by himself or another physician in each case, together with the objective and subjective conditions. Three cases operated upon in Germany are not included. The shortest period between operation and last examination (not last report) is seven months and twelve days, and the longest one year, eight months, and one day—the average period of time being one year, two months, twenty-two days.

Of these 22 cases, 7 presented actual organic adhesions of the retroverted uterus itself, and in 7 cases the tube and ovary of one or both sides were liberated out of adhesions that were distinctly felt in every instance. In the remaining 8 cases the finger found no actual adhesions, although in some (about one-half) the difficulty in reducing the dislocation of the organs before operation made adhesions probable. These were probably what Sielske[9] calls fixation by cohesion. In one case (14) both tubes were found closed and filled firmly with tubercular (cheesy) pus, and were carefully enucleated without rupturing and removed with the ovaries, and primary union of both wounds followed. Removal of the tube and ovary of one side and resection of the other ovary was done upon 8 cases (Nos. 2, 4, 10, 13, 19, 20, 21, and 22). Removal of one tube and ovary was made upon 2 cases (Nos. 11 and 12). Removal of one pregnant tube without its ovary was done in one case (No. 8), in which the tube and ovary of the other side had been removed eighteen months previously, when the round ligaments were also shortened by ventral celiotomy. But an intervening pregnancy and labor at term had wiped out every trace of that shortening and a marked retroversion had returned.

Resection of one ovary was made in four cases (Nos. 3, 5, 16, 18), and of both ovaries in 6 cases (Nos. 1, 6, 7, 9, 15, 17). Suspension of an ovary was done in 4 cases (Nos. 4, 6, 8, 19). Of collateral operations the following were performed: Curetment in every case, usually with cauterization and packing. Cystoscopic examination in 2 cases (Nos. 6 and 9), with cauterizing of portions of bladder mucous membrane in one of them. Simple trachelorrhaphy in 1 case (8). Schröder cervix operation in 3 cases (Nos. 5, 15, and 20). The writer's "intrapelvic, infravaginal perineor-

rhaphy without loss of tissue" (*Medicine*, July, 1897) in 8 cases (Nos. 2, 4, 5, 7, 8, 11, 13, 15), and hemorrhoids were burned off wherever present as a final act.

The present state of health of these 22 *cases is as follows:* Fifteen are well and discharging their duties regularly without any constant or regular ailment, aside from such things as an occasional headache or sideache, or slight pain with menstruation. Three (Nos. 3, 6, 15) are attending to their duties regularly, but have more severe or more frequent pain from their pelvic organs, No. 15 having an oöphoritis dextra, and a beginning retroversion as the first instance of returning displacement that the writer has experienced in over 100 of his cases that he has examined. Case 1 is a neurasthenic and rheumatic subject, in whom the neurasthenia was regarded as largely due to her pelvic condition by himself and two other physicians who preceded him; for she had a decidedly large and retroverted uterus, with large cystic ovaries that dragged low down and forbade a pessary. She was afflicted with subacute rheumatism for several months after leaving the hospital, and her dysmenorrhea and nervous condition have not improved in proportion with the position of her pelvic organs. She claims to be suffering as much as before operation. The remaining cases (Nos. 14, 17, and 18) are well as far as their generative organs are concerned, but they are partially disabled respectively by tuberculosis of the urinary tract, endocarditis, and catarrh of nasopharynx and bronchial tubes.

The operation, therefore, has corrected the position and condition of the generative organs in all except one case, and it has eliminated the symptoms from them in all but four cases, in whom they are less severe but not absent.

But the crowning superiority of round ligaments shortened *via* their natural channels over all competing operations, is found not merely in their harmlessness, but in not permitting a return of the retroversion of the uterus after subsequent pregnancy and labor at term. In this, its continued serviceability, as a rule, beyond successive labors, it stands without a competitor, according to all positive evidence that has been or is likely to be adduced.

While a smaller number of abortions have occurred, mostly upon provocation, the writer now knows of 8 of his cases going to term normally and passing through a natural labor, with one

exception of a breech presentation which required artificial delivery. Seven were examined by himself and 1 by another physician after the following periods after labor: (1) Eighteen months, (2) fifteen months, (3) thirteen months, (4) twelve months, (5) eleven months, (6) ten months, (7) three months, and (8) two months. And in each case the uterus is sufficiently anteverted to invite the play of intra-abdominal pressure upon it in the normal direction. The pronounced character of the anteversion in these cases bears testimony in favor of the observations and the theory of Rühl[6] and J. Schultz, that the supervention of pregnancy after this operation causes the round ligaments to grow stronger in the same manner as muscle is strengthened by exercise—*arbeitshypertrophie*—in addition to the natural evolution of the ligaments in pregnancy, along with the uterus as a part of it. Furthermore, Edebohls and J. Schultz each record 7 cases, Rumpf 11, and Stocker[7] 8 cases—all examined after one, and several after two labors, without a return of retroversion in a single case. Burrage[8] observed in all 12 cases of pregnancy and labor after the Alexander operation. In 2 cases the operation had been a failure primarily, and 1 had to endure a manual separating of the placenta and a long and severe septic puerperium. In these 3 cases, for these very sufficient reasons, displacement of the uterus had recurred, but in the 9 others that could be fairly counted the uterus continued in mobile anteversion. Thus we have a collection of 50 cases of this kind by six different operators, without any recurrence of displacement in a single instance. In addition to that come 9 cases by Krönig and Feuchtwanger (Zweifel's clinic), with 2 recurrences of displacement, which are accounted for, in the writer's opinion, by the fact that the ligaments in their cases were used more as suspensories after the Kocher method of the Alexander operation, particularly as one of the failure cases had a prolapse in the beginning. But with a liberal construction and without an exhaustive search, and with the naturally inferior results of their several apprenticeships all included, the advocates of inguinal shortening of round ligaments have 59 cases, all but 2 of which have passed the double test of pregnancy successfully, while the much greater number of advocates of other supposedly competitive procedures have not brought forth a single case officially, out of their manifold greater number of cases that have passed

the same test successfully and could be placed in a column to offset any one of the 57 in the Alexander column. Aside from Burrage, every one of these operators, as far as the writer has been able to ascertain, has applied only the single test of pregnancy to his cases, in noticing merely that his operation did not embarrass gestation or complicate labor in his patients. But what becomes of the status of the pelvic organs of their patients, as a rule, after labor, none of these gentlemen has either cared or dared to reveal. As long as the progenitors and defenders of ventrosuspension by all the various "artificial ligaments," so-called, and of abdominal and vaginal shortening of the round ligaments, of vaginofixation of these ligaments, and of the more innocent degrees of vaginofixation of the uterus, do not apply what the writer has named the double test of pregnancy as the normal standard to their cases subsequently, by reviewing all of them systematically after an intervening labor, and do not find that the majority of such cases retain an anteverted uterus—so long we cannot accord to these, their favored operations, the dignity and value of curative procedures, but must view them merely as more or less unnatural and temporary or auxiliary relief measures, to be very sparingly applied to fruitful females; because the various substitutes for ligaments that are devised cannot conform to the fundamental requirement to undergo an actual *evolution* and also *involution* with the uterus during gestation and after labor, but they merely stretch and afterward remain long and incapable of good, but not of doing harm. And the various methods of shortening the round ligaments by doubling them up or stitching loops into them are dependent upon the uncertain tenure of stitches and adhesions. They are frequently followed by a relapse of retroversion before pregnancy supervenes, and when this does follow and go to term it effectually eliminates all such loops from the round ligaments, as the writer has repeatedly seen, and leaves the ligaments as long as ever.

References.

1. Krönig and Feuchtwanger. Monatsch. f. Geb. u. Gyn , Bd. xl., H. 4.
2. J. Schultz. Beiträge z. klin. Chir., Bd. xxiii., Hft. 3.
3. Rumpf. Archiv. f. Gyn., Bd. lvii., Hft. 2, S. 446.
4. Edebohls. Amer. Gyn. and Obstet. Jour., Dec. 1896, p. 671.
5. Kocher. Chirurg. Operationslehre, 2 Aufl., 1894.
6. Rühl. Samml. klin. Vortrage, 185 u. 186, 1897.
7. Stocker. Centralb. f. Gyn., 1896, No. 21, S. 550.

8. Burrage. Medical News, 1898, vol. lxxiii., p. 453.
9. Sielske. Centralbl. f. Gyn., 1898, No. 3, S. 892.
10. Beck, C. Centralbl. f. Chirurg., 1897, No. 33.
11. Ferguson, A. H. Jour. Amer. Med. Assoc., Nov. 18, 1899.
12. Gilliam, D. T. Amer. Jour. Obstet., March, 1900.
13. Kreutzmann, H. Monatschrift f. Geb. u. Gyn., Bd. iii.-iv., p. 319.

DISCUSSION.

DR. CHARLES GREENE CUMSTON, of Boston, Mass.—Mr. President: I have very little criticism to offer in regard to the able paper which has been presented to us. There is only one thing that occurs to me, namely, the essayist seems to suggest, as far as I can infer from his remarks, that the adnexæ can be treated with ease through a bilateral incision. From my experience in abdominal and vaginal operations, and from the pathology that I have studied, it has always seemed to me that in serious lesions of the adnexæ, such as the essayist has treated through an inguinal incision, are usually out of reach, and that the diseased parts are more easily attained through a median abdominal or posterior or anterior vaginal incision. If he treats his tuberculous cases through the incision that he speaks of, I shall have to disagree with him. I should be afraid of infection. Not having room enough in which to work through a bilateral incision in the abdomen, I should be afraid of infecting either the peritoneum or the incision, and I much prefer to attack these cases through the anterior or posterior vaginal cul-de-sac, or do a median laparatomy, as the case may be.

There is one point I desire to mention in connection with the so-called simple cases of retroversion of the uterus, and it is this, that we rarely meet with a simple case of retroversion of the uterus. I have never met with one single case of *simple* retroversion. Even in the virgin, where no source of infection has taken place, we will find that the uterosacral ligaments in most cases are the cause of the retroversion. We will find them thick and tense, so that when we pull down the cervix with tenaculum forceps they will feel very much enlarged, and by making a little nick in the posterior cul-de-sac and doing a tenotomy on the uterosacral ligament you will free the uterus and bring it in excellent position by the ordinary Alexander operation. On this point I would insist when operating on the so-called simple cases that the uterosacral ligaments be properly attended to. In most cases we will find a few adhesions in the posterior cul-de-sac, and by inserting the finger, opening the peritoneal cavity, and breaking the adhesions down, you then have a movable uterus which can be comparatively easily

replaced by an Alexander operation. I do not doubt that by the bilateral incisions, advocated by the essayist, adhesions can be broken down to a certain extent, the uterus rendered freely movable and brought in good position. But I do think the Alexander operation in the so-called simple cases of retroversion is greatly improved by the additional operation through the posterior cul-de-sac.

Dr. Edward J. Ill, of Newark N. J.—Two or three years ago a valued and honored Fellow of this Association proposed an operation for shortening the round ligament which the writer was pleased to call a vagary in surgery. Dr. Longyear, the advocate of the method I refer to, is not with us, but I wish to say that I have followed the Longyear method and can vouch for the excellency of his modification. It certainly would be a vagary if the diagnosis beforehand was in doubt; but Dr. Longyear very definitely and succinctly says that we must have an absolutely movable uterus. There must not be the slightest doubt at all about that; there must not be shortening of the uterosacral ligaments; there must not be an old parametritis. It is in such cases, which are not frequent, that we can obtain the best results with Dr. Longyear's modification, and it certainly ceases to be a vagary.

Dr. J. Henry Carstens, of Detroit, Mich.—Alexander told me that he devised his operation for the purpose of doing away with opening the abdomen, and any kind of an operation which requires the opening of the abdomen and doing other things is not a true Alexander operation. I do not think Dr. Goldspohn called it that. It seems to me the principal point is this, What have we got? What is the trouble with the patient? What are we going to accomplish? As Dr. Cumston and Dr. Ill have already said, the cases of plain, uncomplicated retroversions of the uterus that necessitate the Alexander operation, or shortening of the round ligament, are very rare, and my experience coincides with that. I do not see these cases. I have seen only one case of plain, uncomplicated, non-adherent uterus that necessitated an Alexander operation, and that was last year, the first case I have seen in the last ten years. All of the other cases that have come under my observation have required something else.

To me the question is simply this: If the woman has a pus-tube; if she has a diseased uterus or a diseased ovary; if she has a non-adherent uterus; if she has shortening, thickening, and hardening of the broad ligament; if she has tuberculosis or anything else, is the case a proper one for shortening of the round ligament or for doing any such operation as has been advocated? From my experience and point of view I should say it is not. It is a great deal better to make simply one in-

cision, and make it a little larger, so that we can get at the parts, after having put the patient in the Trendelenburg position, and do complete surgery, which ought to be done, than to go to work and make two incisions, with a picayune opening on one side, and try to do good surgical work through such an opening. It does not seem to me very reasonable. If a woman has the pathologic conditions that we are dealing with, an abdominal incision ought to be made in the center, one tube or the other removed, and the uterus stitched forward according to the particular case. I would willingly go three hundred miles to see Dr. Goldspohn take out with his finger a diseased tubercular tube that is down in the cul-de-sac. I would like to see him introduce his finger into the inguinal canal that he speaks of through which he takes hold of the round ligament. He must have wonderful manipulative skill to do this; but from my experience in cases of appendicitis, where there is a diseased tube or ovary that necessitates operation, I find it a very difficult thing, indeed, to do anything without a large incision in the side when I remove the appendix. With a little opening in the side I find it exceedingly difficult to reach away back and remove the diseased part. If there is no inflammatory condition present, but simply adhesions, you can introduce the finger into the inguinal canal, sweep it around, and break up the adhesions and stitch the uterus forward. It seems to me there is a tendency on the part of the essayist to make this method too extreme. Look at his cases—twenty-two, I believe, and four of them were not very complete. Personally, I stitch up the uterus in different ways, and I can report cases where the women have become pregnant, and their uteri have remained in place after one or two pregnancies. I cannot write up everything, but for the satisfaction of Dr. Goldspohn I will write up some cases to illustrate what can be done in this class of cases by other methods of operating. By bringing the uterus into proper position and holding it there we relieve the patient. It is going to the extreme to do this operation in almost all cases. In a certain number of instances it is better to make an abdominal incision in the center and remove the pockets. If we remove two tubes and both ovaries we do not need to pay any attention to the uterus. The shortening of the broad ligaments will keep the uterus in place. Beside, the uterus will undergo senile atrophy and shrivel up.

In many cases of retroversion, with diseased ovaries and tubes, the women will be better off if we do a vaginal hysterectomy and pay no attention to the round ligaments or anything else. Many of the cases I have seen have been subjected to two or three operations, and then they did not get well until more radical measures were resorted to.

The question is largely one of correct diagnosis. Is this or that a proper case for the Alexander operation or shortening of the round ligaments? I think it is a little far-fetched to say that cases of tubercular salpingitis, etc., should be subjected to this kind of operation.

Dr. W. E. B. Davis, of Birmingham, Ala.—Unquestionably Dr. Goldspohn has accomplished a great deal in justifying and popularizing the operation he has described. I remember in my early experience to have operated on a case in which I could not find the round ligament, and, having promised to do an extraperitoneal operation, I was decidedly embarrassed. Finally, I opened the peritoneum and completed the operation. If the woman is wearing a pessary satisfactorily and with relief, she will be cured by the ordinary round-ligament operation, and it is not necessary to open the peritoneum in such a case. If the case is one of major pelvic disease, and certainly the gynecologist can determine this without opening the abdomen, he would not think of entering the inguinal ring to remove the diseased adnexæ. Therefore, I am of the opinion that the operation of Dr. Goldspohn should be adopted in those cases where the gynecologist, after examination of the patient under anesthesia, is in doubt as to the presence of tuboovarian disease.

Dr. Frederic Coggeshall, of Boston, Mass. (by invitation).—I feel very much honored, Mr. President, yet a little embarrassed, in being invited to say something on this subject. I did not come here with the idea of speaking, but simply to learn, and I do not know that I can add very much to the discussion.

I have not my own statistics fully in mind, but the remarks I shall make are based on 111 cases or more of the Alexander operation. But I must say that in the majority of those cases this operation was performed in connection with something else.

It has been my experience that we see very few cases of simple, uncomplicated retroversions of the uterus. The very simple forms of retroversion are such that the uteri can be easily replaced. In such cases a simple Alexander operation is very easy.

The point has been very well made that the round ligament is the natural support of the uterus forward, and this we should take advantage of. I have had very good results from the regular Alexander operation in the more simple cases, but in the complicated ones I have combined it with some other operation, according to the indications in particular cases. I have done about the same operation as Dr. Goldspohn describes in three cases, in all of which I failed to find the ligament by the ordinary operation. But what impressed

me most as an objection to that method is the fact that if we have much disease of the adnexæ there is almost invariably, in my experience, prolapse associated with it, and these cases can be reached more easily through a posterior vaginal incision. It is simpler to go in through the posterior vaginal route, bring the retroverted uterus into the vagina, deal with the tubes and ovaries, replace the uterus, and do an Alexander operation. This seems to be going a long way around to obtain results, but my experience with this method has been satisfactory. It is not a long operation.

Cases of retroversion without adhesions are rare. In many instances the uterosacral ligaments are shortened. We can make an incision through the posterior cul-de-sac, break up the adhesions, cut the uterosacral ligaments, and then replace the uterus.

After all, it matters not whether we make a median abdominal or posterior vaginal incision, after we have treated the adnexæ, broken down the adhesions, etc., the ideal way of fastening the uterus in the position of anteversion, in the vast majority of cases, is to make use of the round ligament through its natural channel. It is easy to get at them and bring them out through the ordinary Alexander incision. If the operator understands the technique it will take but twenty or twenty-five minutes at the outside. This does not prolong the operation materially.

I recall a case of double hernia following splitting-up through the internal ring in a woman who became pregnant six weeks after the operation, but these herniæ disappeared after shè had gone the full term and had borne a baby. It is now two years since the child was born. The child is alive, healthy, and the woman has had no further trouble with hernia.

In another case the patient got out of bed two or three hours after the operation, walked across the room, and the result was unfortunate.

In a third case the ligatures tore out and the retroversion returned.

With these three exceptions the uteri have remained in good position after this operation as far as I have been able to trace the cases —that is, in more than two-thirds.

Dr. Carstens.—Permit me to ask you a question. One would infer, from your remarks that the round ligament holds the uterus in its normal position. Do you believe that?

Dr. Coggeshall.—No; I do not. I tried to convey the idea that the round ligament is a natural thing to use in these operations.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I would like to call the attention of the Association to the fact that the old operation,

advocated so thoroughly by one of our Fellows this morning, of anterior fixation, or suspension of the uterus, is not as popular as it was a few years ago, and it is one that in all probability will soon be relegated to the rear. It will soon be an operation that will only be made in rare instances. Men dislike to talk about their failures and disappointments following operations. In fact, it is quite the rule for the majority of men not to do so. If all of the failures and all of the disappointments to the patients and operator could be tabulated in one column against another column, the successes and relief derived from anterior fixation or suspension of the uterus, by stitching the *body* of the uterus to the anterior abdominal wall, I am strongly inclined to believe that the column of disappointments, vexations, etc., to patients would be largely in excess of the other column. We must not lose sight of the fact that we as operators have no right to subject a patient to an operation to relieve one symptom, when we are not certain that we do not put her in a position in which she is worse than she was before. While we admit that a retroverted or adherent uterus is a condition by which many women are disabled or are practically invalids, and we want to relieve them, I do not believe that the anterior fixation operation or suspension of the uterus is the procedure that will stand the test in all cases. There have been reported a number of cases where the bowel has become incarcerated, forming an internal hernia, due to this condition. I have come to the point where I refuse to stitch the uterus to the anterior abdominal wall for the relief of any condition. It is much better in those cases in which both ovaries are removed to sacrifice the uterus by having a hysterectomy performed than to have the organ stitched to the anterior abdominal wall. We have no right to subject a woman to a section, and leave her in a condition so that it will become necessary for us to do another operation in six months or a year later.

I believe the operation advocated in the paper this morning has much in its favor. The Alexander operation has been disappointing, for various reasons, some of which have been mentioned. Dr. Goldspohn overcomes many of the objections of the Alexander operation by simply extending the operative procedure a little further. He dilates the canal, introduces his finger, and finds out what the condition is. I do not understand him to advocate this operation for the removal of pus-tubes, tuberculosis, etc., but that he simply mentioned these conditions as having been discovered by accident in one or two cases. I believe the rational method of fixing the uterus forward, if we must do it, is to fasten it by the round ligaments.

I have not done any of these operations, for the reason that I have been opposed to the Alexander operation, and have spoken against it a number of times. But I said to Dr. Goldspohn this morning that I had followed his writings carefully, and that he had almost converted me to his way of thinking upon the subject. I wish to commend the principle and spirit of this operation, and I believe he is working along the right line for the relief of this condition.

DR. GOLDSPOHN (closing the discussion).—I am sorry to have to draw the line a little in reference to the remarks of Dr. Cumston and Dr. Carstens, for the reason that they were not pertinent to the subject, the title of my paper distinctly stating "Aseptic Cases." In doing this operation, therefore, there is no intention to deal with either pus-tubes or tuberculous tubes, unless such a condition is discovered by accident, as it was in the case of one of my patients. The case of tuberculous tubes I operated upon was that of a girl whose uterus was bound down by adhesions, and the parts were so solid and relatively void of tenderness as to make it probable that there was no septic condition present. In this case the tubes were as hard as my finger, and in enucleating them I did not rupture them. I simply have back of this principle of working in the abdomen without sight the general, broad custom, based on numerous laparatomies made by Lawson Tait, Joseph Price, and their disciples, of doing the best work for women by touch, and not by sight. They do the most delicate surgical work by touch, not by sight. I can prove to anyone that the organs can be reached by one finger in the dilated inguinal ring, as well as by two fingers in an incision in the median line, midway between the symphysis and umbilicus, and can get a retroverted, adherent uterus out of the cul-de-sac. If there is any objection to this work, it is the necessity of a reasonably certain diagnosis that septic accumulations are not present. We know that a diagnosis can be made in the majority of cases of infections that occur in the genital tract. We know, too, that the infectious agent does not exist indefinitely. It dies out in a large proportion of all the cases, but leaves adhesions frequently at the former seat of warfare. If we are painstaking in making a diagnosis by bimanual palpation, when the patient's bladder and intestines have been thoroughly emptied, the waist relieved of all constriction, and her body and limbs placed in the most favorable position to relax the abdominal walls, one can generally recognize purulent accumulations. I recall having taken out septic tubes, nevertheless, in five instances, one of them occurring in Munich, where I could not examine the case myself before the anesthetic. The pus could be extruded after the tubes were taken out. They were enu-

cleated and tied off without rupturing them, and in those cases I closed the abdomen without fear or any desire to drain, and the patients made good recoveries. But suppose I should meet a pus-tube in spite of all care, if I ruptured it my finger would know it, and then I would at once do a median section and be master of the situation, but I have never had to do that. What would be the harm? Nothing is going to happen during the three or four minutes it takes to get in there through a wide median opening.

As far as nicking the uterosacral ligaments is concerned, I prefer not to do that, because these ligaments not elongated are just as necessary there as are the round ligaments at the other pole of the uterus. Both are needed to properly poise the organ in mobile anteversion. If they are retracted and thickened they can be stretched bimanually by massage and forcible reduction without any incision in the cul-de-sac. If we would resect the ovaries, do a salpingostomy, and shorten the natural lateral supports of these organs through the vagina, then I would advocate that route as a supplementary act to the Alexander operation; but in order to break up adhesions we do not need any additional opening. By dilating the inguinal canal I can reach down, loosen the adhesions, and bring the tube and ovary into convenient access, and do as delicate work under distinct sight as any man can do through a small median wound, because he has to bring these organs from their natural position to the median line so far that he does more or less violence to the natural supports of the organs. What Alexander proposed and what can be done in dealing with these cases are two different things. The work of Alexander was very commendable for its day; but what can now be done through the inguinal canal need not necessarily be limited to what Alexander thought by any means.

Let Dr. Carstens and others, who casually mention a few isolated cases of other operations for retroversion when the displacement has not recurred after a subsequent delivery at term, get laboriously at work, like the Alexander operators, after all their cases have been subjected to the subsequent test of delivery at term, and ascertain positively what is the position of their uteri. Until they do that, and find that retroversion has not recurred in at least a majority of such cases, they stand as advocates of merely temporary procedures, applying only the simple test of pregnancy but not what is justly required, the double test, a requirement that means a cure of the displacement for life.

Dr. Davis says that the Alexander operation is indicated in those cases that will stand the test by wearing a pessary. Those are the

simple cases. If they were all simple or uncomplicated we would not need the Alexander operation at all, perhaps.

DR. DAVIS.—I believe I referred to a class of cases in which it is not necessary for us to open the peritoneum.

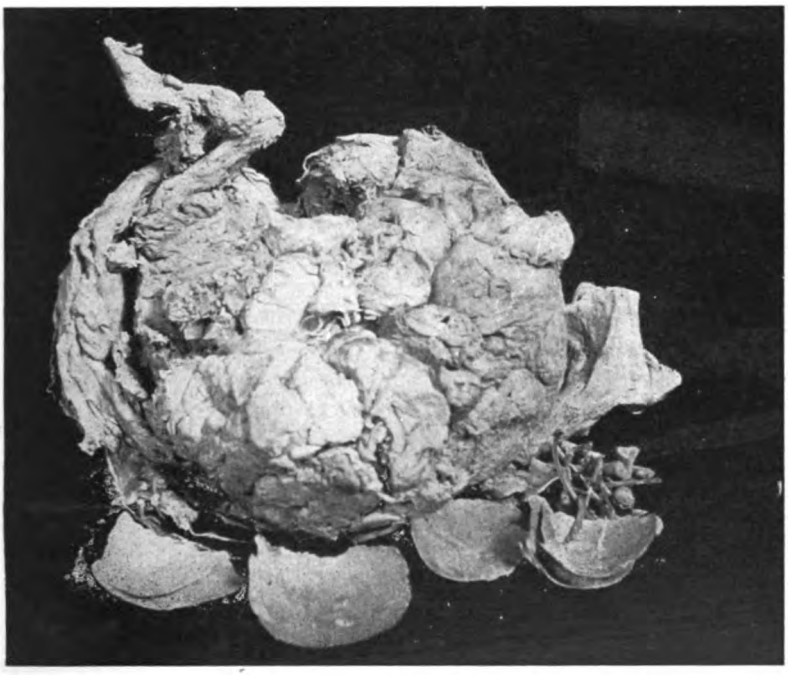
DR. GOLDSPOHN.—Then we agree. We do need to open the peritoneum, however, because in many of these so-called simple cases, where the uterus and appendages are free, when we get in we find follicle or corpus luteum cysts that we can dissect out easily from ovaries, and I feel a serious neglect of duty if I do not relieve an ovary of these cysts. Furthermore, in about 40 per cent. of all cases, even the simple ones, the round ligaments will not pull from the uterus after extra-abdominal work alone. I report eight cases without adhesions, yet I had to resect the ovary on one side at least in every case. In one of the cases, where I removed an ovary and tube, and resected the remaining ovary severely, the woman became pregnant inside of two months after she went home. She now has a baby two months old, and everything is normal after an easy and speedy natural labor.

A CASE OF COMPOSITE TERATOMA OF THE OVARY.

By W. E. B. DAVIS, M.D.,
BIRMINGHAM.

THE tumor which I present is one of great interest, and notwithstanding the above diagnosis has been made by pathologists of high standing there is room for doubt as to the correctness of their opinion.

Mrs. N., aged thirty-four years, married, was referred to me by Dr. Givhan, May 3d. Mother of three children; had always menstruated regularly except when pregnant or nursing. Patient observed a growth in the abdomen two years ago. She had menstruated in January before it was noticed, and then missed until March, at which time she menstruated or bled very freely for two weeks. She then missed periods until the following October, with no untoward symptoms except an attack of colic in August. Movements were felt before August. After October she menstruated regularly until the following January. Missed her periods then until October 24, 1899, when a child was born at term. After the birth of the child the tumor developed quite rapidly. On May 7, 1900, she was operated on. The tumor had a pedicle nearly two inches in breadth and quite thick, which was attached to the right side of the uterus. It had the appearance of a multilocular ovarian cyst and extended three inches above the umbilicus. There were extensive adhesions to the omentum, which were separated without difficulty. The cranial bones, which had been made out before the abdomen was opened, were, of course, more readily recognized after the tumor had been exposed. My diagnosis before and after operation was ectopic gestation, and I have not been convinced that this view of the case should be changed. The patient recovered and was discharged June 9th.



Composite teratoma of ovary.

The following report was submitted to me by Dr. Brooks, the well-known pathologist of New York, and Dr. Edgar A. Jones, professor of pathology in the Birmingham Medical College :

Examination reveals a large, rounded, ovoid mass about the size of an adult head, covered by a moderately thin fibrous capsule. The capsule is continuous on one side with the tumor mass. The weight of the whole tumor is 2850 grams. Within the capsule are observed numerous sacs of variable size, which are rounded in contour and are filled with a semifluid, gelatino-albuminoid tissue. Lying in one side of the tumor is part of a fetus. There are numerous bones of a fetus lying in the capsule. The upper part of the fetus is embedded in the solid portion of the tumor. This portion of the fetus is so intimately combined with the tumor that no sharp line of demarcation can be determined, one tissue gradually passing over into the other. There are numerous nodular and teat-like elevations, in some places covered by smooth skin (?), in others by skin (?) provided with fine, brownish, silky hair. Incision of these frequently reveals a whitish, cheesy substance resembling sebaceous secretion. The soft parts of the fetus are macerated and quite soft. The bones, such as the vertebræ, ribs, tibiæ, and metatarsal, are exposed in many places. There are two well-developed scapulæ (right and left), and to the left is attached some slight semblance of an extremity. Lying in a mass of muscular tissue to the left of the vertebral column is a long piece of bone resembling somewhat a humerus. Attached to the lower end and left side of the vertebral column by means of a flattened piece of bone is an almost perfect lower extremity. The femur is entirely covered by muscle, but the tibia is exposed at its lower end. Some of the phalanges are missing, but the foot is fairly well formed. Careful dissection of the upper part of the fetus fails to reveal any cranial bones attached to the vertebral column. There are two pieces of the inferior maxilla lying in the mass of tissue at this place. They are well shaped, and a dissection of the right one shows rudimentary tooth sacs and a piece of nerve. The laminæ of the vertebræ have not united, so that the spinal canal is not complete, and the spinal cord is seen lying in this position, with nerves arising regularly from each side. The bones lying free within the capsule are two parietal, an occipital, two pieces of frontal abnormally united, several

well-formed ribs, and five or six long bones of extremities. Parts of the lungs, liver, stomach, and about 60 cm. of intestine are preserved.

Microscopic examination of sections of tissue selected from all portions of the tumor shows a very complex histologic structure. Some portions of the tissue are composed of simple, fully developed adipose tissue, enclosing occasional bands of unstriped muscular tissue, the whole surrounded by fully developed and practically perfect skin. The skin contains sebaceous and sweat glands in considerable quantities, and hair follicles, with hairs in position. The sebaceous glands are larger than those found in normal skin. Other portions show true myxomatous tissue, still others cartilage, and the early stages of osseous development. Sections from the walls of cysts show the inner surface of them to be lined by almost true skin ; the epithelial layers lie internally, lining the cyst, the papillary portion lying externally. Sebaceous and sweat glands occur in these sections, and frequently they may be seen opening into the cysts. Other cysts are lined by a simple layer of low cubical epithelium, either in uniform arrangement or thrown into folds or villi, similar to the formations found in uncomplicated cystic papillomatous adenoma of the ovary. The lining of other cysts is made up in some parts of flat or squamous epithelium, in other parts by columnar or cubical epithelium of the glandular type, and frequently one kind of epithelium passes over into the other. Anatomic diagnosis: Composite teratoma, combined with cystic adenoma of ovary.

DISCUSSION.

Dr. Edward J. Ill, of Newark, N. J.—Mr. President: The specimen presented by Dr. Davis gives us a wide field for theory and the exercise of the imagination. I should like to know whether Dr. Davis has any suggestion as to sex. If it could be made out, was it not likely a female fetus with an ovarian tumor?

Dr. A. Goldspohn, of Chicago, Ill.—I cannot claim to be well informed in regard to the pathology of teratoma of the ovary, and I do not know whether my ideas would be seconded or considered entirely sound by the best pathologists. But it looks to me that this specimen favors the doctrine of primary ovarian pregnancy. This is a possi-

bility claimed by some. But the question is not yet settled. There have been some striking observations made which indicate that pregnancy does occur primarily in the ovary. And this remnant of a fetus and a neoplasm being completely enveloped in a capsule in a distinctly ovarian tumor looks, at least at first sight, like a case of primary ovarian pregnancy where the neoplasm developed and consumed or strangulated the fetus, and the whole thing developing in the period of time mentioned, seems to be fairly consistent.

DR. CHARLES GREENE CUMSTON, of Boston, Mass.—I have very little to say. The theory of inclusion has been largely abandoned, and for that reason the theory advanced by Dr. Goldspohn would seem to be more probable, because the nature of the tissues goes to show that the ovary in which the fetus developed was already the seat of some pathologic condition, and this may account for the development of the fetus in the ovary. I only advance this as a hypothesis and nothing more.

THE TREATMENT OF CHRONIC CYSTITIS IN THE FEMALE BY CURETMENT OF THE BLADDER AND INSTILLATIONS OF CORROSIVE SUBLIMATE.

By CHARLES GREENE CUMSTON, M.D.,
BOSTON.

Severe and painful types of chronic cystitis are frequently met with in the female, and are very prone to be most rebellious to ordinary means of treatment. In this paper it is the purpose of the writer to describe the technique of a method of treatment applicable to these cases, and due to the scientific researches of Guyon, of Paris, and his followers.

Before describing the technique of curetment of the bladder in the female, as well as that of instillations of bichloride of mercury, it may not be out of place to first consider, in a brief manner, the pathologic anatomy and the physiology of the bladder, in order that we may better understand the proper application of the treatment here advocated. Tuberculosis of the bladder is far more frequent as a primary lesion than many are led to suppose, and the seat of tuberculous lesions in the bladder and those of chronic non-tuberculous cystitis have been carefully studied and described by Clado. According to him the principal and nearly exclusive seat of these lesions is in the mucous membrane of the urinary reservoir. The tuberculous granulation has its starting-point in the mucous membrane itself, and particularly in that part of the mucous tissue which is in contact with the epithelium of the bladder; in other terms, in the most superficial layers of the structures composing the organ.

In a bladder in which ulceration has not yet taken place, the granulations, when they are still small, project very perceptibly above the surface of the mucous membrane. When ulceration has

taken place the lesion may be quite deep, and may even involve or extend beyond the muscular structures. But along with these other ulcerations will be found which are so superficial that they hardly more than involve the mucous membrane. If a section is made through one of these granulations, or through a superficial ulceration of the mucous membrane, the microscope will show that the granulation has developed immediately *under* the epithelium and projects directly into the cavity of the bladder; the epithelium has disappeared at the site of the lesions. Under the tubercle the mucous membrane may be nearly normal or thickened. In other words, the tubercle does not involve the deeper layer of the mucous membrane at the beginning of its development. If a section is made through an ulceration it will be found that the lesion involves the same structures as the granulation which gave rise to it.

In chronic cystitis, as in the tuberculous form of the affection, the mucous membrane is also the almost exclusive location of the lesions. It is softened and is easily torn when the surface of the bladder is scraped with a sharp instrument, or, for that matter, with a dull one. The mucous membrane is thickened and only adheres slightly to the underlying structures, while in certain cases the pathologic process may have given rise to the production of false membranes, granulations, and villous productions.

The lesions are not dispersed over the bladder haphazard, but, on the contrary, show a marked predilection for certain parts of the bladder and the urethra, such as the trigonum, around the mouths of the ureters, the neck of the bladder, and posterior urethra. When the lesions involve the entire surface of the organ, a condition which is rather exceptional, the above-mentioned parts, and more especially the neck of the bladder, are more particularly involved, and the lesions here will be found of longer standing and more advanced in their evolution. The practical conclusion which naturally comes of these remarks is, that it is easy to reach the diseased structures with a curet, provided that they are very superficial and not far away from the neck of the bladder. In tuberculosis the disease attacks the bladder probably quite as often as the kidney, and Guyon believes that the latter organ is infrequently the initial site of this affection. Consequently, we may assume that in certain cases a radical cure of tuberculous cystitis may be obtained.

From what has been said one may easily see that in most cases a curetment of the entire surface of the bladder is unnecessary. Even should the surgeon desire to curet, it would be almost impossible to carry it out effectively through the female urethra, especially if the bladder were filled, because in this state the wall of the organ is not resistant and flies away from the pressure exercised by the curet, and for this lack of resistance a curetment performed under these conditions could not be carried out effectively. This is fortunately not the case when we operate on an empty bladder, because it is demonstrated physiologically that the transverse diameter of the bladder is nearly always constant when the bladder is empty. In order to expel the urine the fundus of the organ approaches the neck until it is in contact with it, while the summit becomes lowered and the fundus rises up. But the complete obliteration of the cavity is, above all, accomplished when the posterior wall is in apposition with the anterior wall, and Sappey says that in the state of vacuity the internal surface of the bladder presents two surfaces and three borders ; the two surfaces are triangular in shape and touch each other ; the anterior surface is hidden behind the pubis, while the posterior is in direct relation with the uterus and anterior vaginal wall.

Let us suppose now that, the bladder being completely empty, we introduce one or two fingers into the vagina, and with them push upward and forward the anterior cul-de-sac ; we thus realize the point of resistance which was wanting over the posterior surface of the bladder. Under these circumstances we can curet the anterior aspect of the bladder by the resistance offered by the pubis, while the posterior surface can be gone over with the curet against the fingers introduced into the vagina. The apex and the lateral borders are less easily reached by the instrument, but, as has already been said, the lesions, when they are present here, are always less numerous and more advanced than in other portions of the organ.

We will now consider the technique of instillations of the bichloride solution, but in the first place we would call attention to the reason why this method is preferable to irrigation of the organ. In cases of cystitis, and particularly in those where much pain is present, vesical irrigations should be prescribed as being less efficacious than instillations, not only by their effect on the

general progress of the disease, but also because they must be considered dangerous. Sublimate instillations produce less pain than those of nitrate of silver. When vesical tuberculosis was first treated by local applications, instillations of nitrate of silver or a solution of creasote in glycerin were used, and were always followed by little or no success, and in most cases the affection was badly influenced by them. The pain was increased and the lesions appeared to make more rapid progress. On the authority of Guyon, whose experience is very large in this matter, it may be said that corrosive sublimate may be employed advantageously in *all* cases of cystitis, and that the result of its use will, in a large measure, be successful.

In gonorrheal cystitis sublimate instillations both in the male and female have given us excellent results, but they are particularly applicable in the chronic forms which persist indefinitely even though all urethral discharge has disappeared. Chronic gonorrheal cystitis, which is usually of the painful variety, is often most rebellious to treatment with nitrate or citrate of silver, and oftentimes instillations have given excellent results, and this has been my experience in the few cases I have treated.

In cases of acute cystitis or those produced by catheterization, in the cystitis accompanying hypertrophy of the prostate, and in those cases where the nature of the affection is still poorly understood, and which are more particularly met with in the female, we have obtained excellent results with instillations of sublimate. Of course, we exclude those cases of cystitis which are produced by the presence of a calculus, and are cured when the foreign body has been removed; also those cases where the bladder is the seat of a neoplastic production. To sum up, we may say that instillations of sublimate may be employed with advantage in all cases of cystitis, and the effect is still more remarkable in the tuberculous variety, as well as in all those cases in which pain is a predominating element.

The instruments necessary for intravesical instillations are a syringe with a capacity of four cubic centimeters, preferably one made with a glass reservoir and rubber mountings, so that the salt will not attack it, and a small perforated bulbous catheter not larger than a 12 or 14, French scale. The patient should be instructed to empty the bladder immediately before the operation, so

that the therapeutic agent will not be diluted by the urine, and also that it may come into direct contact with the lesions.

The syringe is then filled with the solution, its point is introduced into the end of the sound, and a little of the solution pushed through it so as to drive out the air. The sound is then gently introduced into the bladder and the quantity of liquid is slowly injected. In the male it is better to instil the solution in the posterior urethra when withdrawing the sound, and it is important that the posterior urethra should be treated, because it always participates in the inflammation of the bladder. In those cases in which there has been no pain during instillation of the bladder, but when the posterior urethra is painful, we sometimes can do without treatment of the latter, and patients will nevertheless get well. During this treatment we can only be guided by an attentive observation of the effects produced and the results obtained, and this can be our only guide in carrying it out.

After the sound has been withdrawn it is well to tell the patient to turn first on one side then on the other, and then on the abdomen, so that the solution shall come in contact with all parts of the mucous surface of the organ.

The first instillations are occasionally somewhat painful, and also when the strength of the solution, or its quantity, is increased pain may be complained of; but when the treatment is carried out carefully the pain is always of short duration, and the use of cocain or eucain is not really indicated except, perhaps, when we are using a 1 : 500 solution of sublimate.

In principle, the instillations should be given every day, so that the bladder can be kept in as constant a state of antisepsis as possible, but it is more prudent, perhaps, when we gradually reach the use of rather strong solutions, such as 1 : 2000, 1 : 1000, 1 : 500, to carry out the treatment in the first place only every other day, and after this, when it is well borne by the patient, to continue it every day. This question is entirely one of judgment on the part of the surgeon, and definite rules cannot be laid down, because, first of all, we should study *the sensibility of the patient, the effects produced by the sublimate, and the reaction that it causes*, and on this knowledge we can base the proper method of carrying out the treatment. This is a most important point in the treatment because, otherwise, a contrary result to the one desired will

occur, and consequently great prudence must be exercised. This is a rule of general surgery, and nothing more.

Generally speaking, we may commence in the adult with a solution of 1 : 4000 and in the child 1 : 5000; more diluted solutions than these are too weak to be of any therapeutic value. *The strength of the solution is to be progressively increased according to the tolerance of the mucous membrane of the bladder.* It may be said that in recent cases of cystitis, no matter what their nature may be, it is useless to use solutions stronger than 1 : 2000 or 1 : 1500. Generally speaking, also, the older the case of cystitis the more difficult and longer it is in yielding to treatment; but of all the types of this disease the tuberculous is the hardest to cure and requires much perseverance on the part of the surgeon.

As to the quantity of liquid to be instilled, it has seemed to me that from 2 *to* 4 *cubic centimeters* is the proper amount, and from 10 *to* 15 *drops* in the neck of the bladder and the deep portion of the posterior urethra. More than this quantity is useless and to my mind injurious, and is certainly very painful to the patient.

The solutions of sublimate should never be made with alcohol, for they are very painful, irritating, and badly tolerated by the patient. A tablet composed of 25 centigrams of bichloride of mercury and 1 gram of tartaric acid is very convenient, one of these dissolved in a liter of water making a solution of 1 : 4000. I am not aware whether any local or general accident has ever been produced by the treatment of cystitis with sublimate instillations, but at least none has ever occurred in my hands.

The instruments necessary for curetment of the bladder are few and simple. A long, narrow Recamier uterine curet, a large metal catheter with two good-sized eyes, and an irrigator are all that are necessary. A double current metallic catheter is absolutely useless, and should never be employed. I would also say that I have tried to curet the bladder through Kelly's cystoscopes and have never been able to accomplish anything. For this operation general narcosis is essential.

The patient is placed in the lithotomy position, and after the external genital organs and the vagina have been rendered entirely aseptic, the bladder is thoroughly irrigated with a 3 per cent. solution of boric acid. The solution should be allowed to enter the bladder under a sufficient pressure so that the irrigation

may be thorough, and after a liter or two have been used the bladder is to be completely emptied, for the reason already pointed out.

Two fingers of the left hand are introduced into the vagina, and the curet is then inserted into the bladder. The fingers in the vagina should be made to reach the anterior cul-de-sac, and then by upward pressure they are made to form a resisting surface over which the curet is drawn from above downward.

A certain amount of force is necessary to scrape the mucous membrane, but care must be taken not to perforate the bladder. It is not necessary to be too fearful of this accident, because it is only by considerable violence or brutal treatment that it can be produced. It is well to withdraw the curet, bringing with it a few strips of mucous membrane removed by the instrument, and by this means we can ascertain the degree of pressure necessary for the proper execution of the operation. I usually first scrape the posterior wall of the bladder and then withdraw the curet and thoroughly irrigate the bladder with normal salt solution in order to remove every bit of débris. Then the curet is introduced again, and the anterior wall of the bladder, the neck of the organ, and the upper wall of the urethra are curetted in their turn.

The operation is terminated by a very abundant irrigation of salt solution, because every atom of débris of mucous membrane, fungous particles, and blood clots must be completely removed from the organ; for if they should accumulate within it and should undergo decomposition they would naturally be a source of infection. The first part of the irrigation is usually quite bloody, but after a while the liquid will flow from the bladder perfectly limpid. A Pezzer sound is then introduced and the patient put to bed.

The after-effects of this operation are very simple, and I have never known a hemorrhage amounting to anything to occur; but if much blood is being lost a 4 per cent. solution of antipyrin in irrigations or an instillation of a concentrated solution of ferropyrin will easily control the bleeding. If performed with all due antiseptic precautions the patient should never have a rise of temperature after the operation.

As to the after-care, the principal thing is to see that the sound works perfectly. It is not infrequent to find that the sound be-

comes clogged up by blood clot, especially in cases of hemorrhagic cystitis, but all that is necessary in this case is to inject some boric-acid solution to remove obstruction. The sound should be left in place for at least twelve or fifteen days; it is very common, however, to find that the sound irritates the bladder and the urethra after a few days, but this is usually overcome by removing the instrument and introducing a new one.

Before relating the cases that I have treated by this method I would offer the following conclusions, which are based not only upon my own experience but also upon that of others. (1) Sublimate instillations will often produce *a very great improvement in the distressing symptoms* met with in both tuberculous and non-tuberculous cystitis, such as a diminution in the frequency of micturition, a decrease of the pain, an increase in the capacity of the bladder, and an improvement in the condition of the urine. In *some cases* a complete cure may be obtained. (2) When the instillations *failed to produce the desired effect*, curetment of the bladder is indicated in both tuberculous and non-tuberculous cystitis. (3) In gonorrheal cystitis instillations of sublimate are particularly efficacious and rapidly subdue the pain. (4) Under favorable circumstances a radical cure of primary tuberculous cystitis may be obtained by curetment when *the vesical lesions are localized and the kidneys free from the disease.* Curetment *per urethram will not* allow the surgeon to reach the entire surface of the bladder, so that *when the lesions are extensive they should be directly treated by suprapubic cystotomy.* (5) Much relief may be afforded by curetment to a large number of patients suffering from tuberculosis of the bladder, but who on account of the advanced stage of generalized infection are in no condition to undergo a more radical operation. (6) When cystitis is due to a prolapsus of the genital organs, and when *hysteropexy, combined with anterior and posterior colporrhaphy,* does not relieve the bladder symptoms, curetment of the bladder, followed by sublimate instillations, is the proper treatment.

CASE I.—Mrs. A., aged thirty-four years, mother of three children, all of whom are healthy, has complained of cystitis for the last three years, the principal symptoms being severe pain during and following micturition, which act has to be accomplished about every hour and a half during the day and night. The patient has

lost twelve pounds within the last five months, and is troubled with constant cough.

The left lung is somewhat dull on percussion at the apex, and some few fine crackling râles are to be heard. Bimanual examination of the bladder reveals exquisite tenderness when the organ is pressed between the fingers. The right kidney is slightly enlarged, but not very tender on pressure. Analysis of the urine showed an acid reaction and microscopically an abundance of pus, bladder cells, and a few red blood-corpuscles. Koch's bacillus was present. The capacity of the bladder is 70 cubic centimeters only.

Injections were made every other day for three weeks with the following formula :

℞.—Iodoformi	. . . . .	15
Glycerini	. . . . .	50
Aq. dest.	. . . . .	300

Forty cubic centimeters were injected into the bladder at each séance. Finding that no improvement took place, and that the pain was by no means lessened, curetment of the bladder was performed. Drainage of the bladder with a Pezzer sound was continued for a fortnight, and after this sublimate instillations were used, beginning with a 1 : 4000 solution. After twenty-five instillations the pain had almost entirely disappeared, the patient urinated about every three hours during the day and twice during the night, while the capacity of the bladder had increased to 105 cubic centimeters. The instillations were continued for about two months, increasing their strength until a solution of 1 : 1500 was reached.

At the end of this time the patient was so much relieved that she discontinued treatment, although against our advice. This was two years ago, and the condition of her bladder has remained very nearly the same as when the treatment was discontinued, although the patient is slowly dying from the tuberculous process in her lungs.

Case II.—Miss B., aged twenty-one years, a native of Ireland, has been in this country about one year. For the last six months has complained of great pain before, during, and after micturition, the frequency of which is now about every hour during the day, and four or five times during the night. The capacity of the

bladder is 95 cubic centimeters. The urine was acid in reaction, containing much pus and bladder cells, but microscopically there was complete absence of Koch's bacillus. However, by cystoscopic examination three small superficial ulcerations were found surrounding the orifice of the left ureter, and the surrounding mucous membrane was studded with small typical tubercles.

Nothing could be discovered in the lungs or abdominal viscera; the kidneys could not be palpated, and there was no tenderness along the ureters. The bladder was curetted and drained with a Pezzer sound for twenty days, after which time instillations of sublimate were commenced.[1] At the end of two months and a half the capacity of the bladder had reached 160 cubic centimeters, the patient urinated about every three hours during the day and once or twice during the night. Pain had almost entirely disappeared and very little pus was found in the urine. The patient was seen five months after the treatment had been stopped, and was found to be in very good shape. Unfortunately she would not consent to a cystoscopic examination, so that we cannot say whether the lesions of the bladder had been entirely removed or not.

CASE III.—Mrs. C., aged forty-one years, with pulmonary tuberculosis and genitourinary tuberculosis in advanced stage, has complained of great pain and frequent micturition for the last five months, and these symptoms are increasing in severity. Bladder extremely tender by bimanual examination. Bladder capacity 75 cubic centimeters. Urinates about every half-hour, day and night. Urine acid, extremely purulent, and occasionally containing much blood.

Sublimate instillations were begun, and after two weeks the pain had greatly diminished and the patient could retain her urine for about three-quarters of an hour. At the end of six weeks she could retain her urine from an hour and a quarter to an hour and a half, and the bladder capacity had increased 15 cubic centimeters. The treatment was continued for three months and a half till the patient died, but the relief obtained by the sublimate instillations was very great, and rendered the patient's life much more bearable.

[1] A few months previously we had treated a localized vesical tuberculosis in a little girl by the application of a 60 per cent. solution of lactic acid, but this patient could not be persuaded to have the cystoscope introduced, so this treatment was abandoned.

We now will report two cases of cystitis produced by prolapsus of the genital organs which were not benefited by ventrosuspension and plastic operation on the posterior and anterior vaginal walls, and in which curetment of the bladder, followed by instillations of sublimate, produced a cure.

CASE IV.—Mrs. D., aged forty-three years, a robust and healthy woman, very corpulent, mother of nine children, applied at my clinic for a prolapsus of the uterus and vagina following her last labor, two years ago. The patient complained as much of her bladder as from the inconvenience she suffered from the prolapsus of her genital organs. She could not retain her urine for more than two hours during the day, and was obliged to void at least four times during the night. Micturition was followed by very severe pain, which was slowly wearing the patient out.

Ventrofixation and posterior and anterior colporrhaphy were performed, and the patient left the hospital in excellent condition four weeks after the operation. She, however, returned three months later, saying that although her uterus gave her no trouble whatsoever, still the bladder symptoms remained the same as before the operation. Bimanual palpation showed that the uterus was nicely held in place, but the bladder was extremely sensitive. The urine was alkaline in reaction and contained a large amount of a white flocculent sediment which microscopically showed an abundance of bladder epithelium, some pus cells, and numerous oval and rod-shaped bacteria, which were probably the colon bacillus. She was placed upon the following prescription :

BOSTON MEDICAL LIBRARY JUN 20 1901

℞.—Salol,
Tinct. hyoscyam. . . . . āā 30
Infus. buchu . . . . . q. s. ad 180
M. Sig.—A tablespoonful three times a day.

After a trial of three weeks with this treatment the bladder symptoms remained the same, so curetment of the organ was advised and performed. The urinary reservoir was drained for two weeks with a Pezzer sound, and then sublimate instillations were begun. These were carried out for about six weeks, at the end of which time all pain had ceased, the patient urinated every four hours only during the day, and was obliged to empty the bladder only once during the night. This was done three years ago, and the patient is perfectly well at the present time.

CASE V.—Mrs. E., aged sixty-seven years, menopause at the age of forty-eight. Had always enjoyed excellent health, and is at present a very healthy subject for her age. Patient presented a total prolapsus of the uterus and vagina, and although this caused her very great annoyance she still complained more bitterly of the severe pain produced during and after micturition. The urine was neutral in reaction and contained a large amount of mucus and pus. By bimanual palpation the bladder was not found to be very sensitive.

Ventrosuspension and anterior and posterior colporrhaphy were performed successfully, but after the operation the bladder symptoms were in no way relieved, and the patient could not retain her urine longer than two hours during the day, and was obliged to pass it several times during the night as well. It still contained the same amount of mucus and pus as before the operation.

The exhibition of urotropin, continued for some time, improved the purulent condition of the urine somewhat, but the pain and frequency of micturition remained practically the same, and instillations of sublimate were commenced. These were continued daily for three months, beginning with a solution of 1 : 4000, and during the last three weeks of treatment a solution of 1 : 500 was used every other day. After a month of treatment the pain had greatly decreased, and by the end of the treatment it had entirely disappeared, and the patient could retain her urine with ease for four or five hours. She was seen fifteen months after cessation of the treatment, and the cure had remained permanent.

CASE VI.—Mrs. E., aged twenty-seven years, mother of two children, was seen during an attack of acute gonorrheal pelviperitonitis and cystitis, which had been present for about ten days, contracted from an acute gonorrhea in the husband. She was treated by urotropin internally, and the irrigation treatment with permanganate of potassium, both of the bladder and uterus, was carried out successfully. After ten days the acute symptoms subsided and the treatment was continued with ichthyol glycerin suppositories.

On examination three months later it was found that the bladder was very painful on pressure; there was much pain before, during, and after micturition, and the urine contained a good quantity of pus. Cystoscopic examination revealed a general hyperemia of

the bladder, and scattered over the trigonum were small patches of granular aspect. The uterus was enlarged, tender, and presented a very deep bilateral laceration of the cervix.

The uterus was curetted, and Schroeder's amputation of the cervix was performed. Posterior colpotomy for exploratory purposes was also done, but the tube and ovary on both sides were found practically normal in every respect, except they had contracted a few adhesions with the intestine which were easily broken up.

Instillations with a 1 : 100 solution of nitrate of silver were used in the bladder every third day, but after five séances it became evident that this treatment was only aggravating the symptoms already present. Urotropin was again administered for several weeks with but little success, all local treatment of the organ having been stopped. We then began instillations of corrosive sublimate, using them daily with a certain amount of relief from pain to the patient, and a slight diminution in the amount of pus present in the urine; but after a prolonged treatment of seven weeks, as the bladder symptoms continued, curetment was performed, and a thick and rather vascular mucous membrane was scraped away.

The bladder was drained with a Pezzer sound for a fortnight. The result in this case was very striking. After the sound had been removed the patient had practically no pain during micturition, could retain her urine for four hours during the day, and was obliged to empty the bladder only twice during the night. She was seen about five months later and was found to be practically well.

CASE VII.—Mrs. F., aged forty-three years, a widow, not being able to withstand the temptations offered by the goddess Venus, committed an indiscretion in coitus, resulting in the development of an acute gonorrheal urethritis.

When first seen pus was flowing from the urethra. There was marked dysuria, far more than is usually met with in the female, and frequent micturition. The patient was ordered urotropin at the dose of 50 centigrams five times a day, and the urethra was treated by permanganate of potassium irrigations. At the end of three weeks only a very slight mucous discharge, containing a few gonococci, was present. The irritable condition of the bladder, however, still remained, and the patient was ordered to continue the urotropin three times daily. A urethral suppository of ichthyol, to be inserted every night on retiring, also was ordered.

I then left for my summer holiday, and when I returned three months later the patient presented the following symptoms: She could not retain her urine longer than two hours in the daytime, and was obliged to empty the bladder three or four times during the night. Pain was particularly severe during and after micturition.

Cystoscopic examination revealed a marked hyperemia of the trigonum, and here and there a few granular patches the size of millet seeds were present. By bimanual palpation the bladder was not very tender, both kidneys could not be palpated, and there was no tenderness along the course of the ureters. The uterus was somewhat enlarged, a little tender, and the cervix presented a deep bilateral laceration. The tubes and ovaries could not be palpated, and there was complete absence of any tenderness in the lateral culs-de-sac.

The uterus was curetted, Emmet's operation on the cervix was done and the bladder curetted. The latter organ was drained with a Pezzer sound for two weeks. It is now two years and a half since this operation was done, and the patient has remained perfectly well and free from all old symptoms.

CASE VIII.—Mrs. G., aged twenty-five years, mother of one child now five months old. The labor had been a long and tedious one, requiring the low application of forceps. There was a severe laceration of the perineum, and a retention of urine followed, which necessitated the use of the catheter for ten days. Symptoms of cystitis soon developed, and continued to increase in severity.

We saw the patient five months after her confinement, and found her suffering with a rather severe form of cystitis, the principal symptom being pain before, during, and after micturition, and a constant desire to empty the bladder, the act only relieving the patient for a few minutes.

Instillations of sublimate were begun, and after seven weeks' treatment the patient was practically cured of all her symptoms. She returned, however, about five months later, stating that the pain was recurring, although not as severely as formerly, and that she was obliged to empty the bladder about every two hours and a half. The instillation treatment with sublimate was again begun, extending over a period of three months, and reaching a solution of 1 : 700. At the end of this treatment all symptoms had practically subsided, and the patient has remained well for the last nine months.

CASE IX.—Mrs. H., aged thirty-one years, contracted a gonorrhea which resulted in pelvic peritonitis and bilateral pyosalpinx. We performed posterior colpotomy after the acute pelvic symptoms had subsided; opened the pus pockets and drained them. On account of the severe bladder symptoms, and the very large proportion of pus contained in the urine at the time of the operation, although both renal glands were apparently perfectly free from any lesion, instillations of sublimate were begun three or four days after the operation. These were carried on daily while the patient was recovering from her operation on the tubes, and after five weeks time the pain accompanying micturition and the frequency of the act were greatly subdued.

Three months later the patient was seen again, complaining of much dysuria. An abundant purulent sediment, which contained numerous oval and rod-shaped bacilli, was deposited when the urine was allowed to stand. These were in all probability the bacterium coli, since the urine was very acid in reaction. Bimanual palpation showed that the lesions of the tubes had practically disappeared, the uterus was small, fairly movable, and no pain could be produced by pressure. Bimanual palpation of the bladder revealed a great sensitiveness in the organ. Cystoscopic examination showed a marked hyperemia of the trigonum, more especially pronounced around the orifices of the ureters.

Instillations with a 1 per cent. solution of nitrate of silver, administered every third day, rather aggravated the symptoms, and they were discontinued. Urotropin was then ordered and taken for about a month, with no other effect than to diminish the purulent condition of the urine. Curetment of the bladder was then performed; the organ was drained with a Pezzer sound for seventeen days.

After this the symptoms were much less severe, although at the present time, five months since the operation, the patient complains of a certain amount of pain following micturition, but the urine can be retained for nearly four hours during the day, and is only voided once during the night. The urine contains a small amount of mucus and pus.

CASE X.—Mrs. I., aged thirty-seven years, gives a history of an acute gonorrhea about four years ago, and symptoms of cystitis have been present off and on ever since, although during the last

eighteen months the pain at micturition has considerably increased and there is an increase in the desire to void the urine.

Instillations of sublimate were carried out daily for six weeks, and urotropin at the dose of 50 centigrams four times daily was also ordered. At the end of this time the symptoms were so much improved that the patient discontinued treatment, and we have not seen her since, so that we cannot say whether the good condition in which she was at the time she ceased to attend at the clinic has continued.

DISCUSSION.

DR. A. GOLDSPOHN, of Chicago, Ill.—I do not feel very kindly disposed toward the curetment or treatment of the mucous membrane of the bladder mechanically without sight. The bladder being a membranous organ, entirely different in that respect from the uterus, we do not get any intelligence imparted by the curet—I mean tactile intelligence, the same as we do in cureting the uterus, or in cureting any surface that has more of a base. In cureting the uterus we get some tactile information through the instrument that we are working with, in that it tells us whether to do more or less cureting, and in which direction to work more, and in which direction to work less. The curet will not recognize any infiltrations at this stage of the diseased process; it will not recognize any beginning ulcerations or papilliform growths in the bladder. The matter of scraping the bladder across with this instrument is, therefore, done largely at random, without sight, without any touch sensation to govern the operator as to what and how much surface he shall curet. Under these circumstances it is not rational to assume that the mucous lining of the bladder will be uniformly and completely dealt with by this instrument.

On the contrary, it is very much like a blind man wiping out the marks on a blackboard. He will erase some of the marks, but not all of them. The curet, therefore, will undoubtedly escape a number of spots or areas repeatedly, and leave other spaces intervening untouched. If, then, this is a treatment intended for tuberculous or other infective diseases of the bladder, it is certain that not all of the infected parts will be removed. There will be islands remaining between the furrows, and the infected islands will certainly disseminate their kind over the ploughed ground. From this method of reasoning I would expect no good results to follow this treatment, even

though instillations of bichloride of mercury are used in connection with curetment. It is well known that we have other chemical antiseptics that are much better in their penetrating qualities than is bichloride of mercury. Carbolic acid will penetrate the mucous membrane through gelatinous or mucoid substances better than bichloride of mercury. Scientifically considered, bichloride of mercury is a very powerful agent, but a very fickle, notional antiseptic agent. It is powerful only under certain limited conditions. The conditions in which it is active are more limited than are those demanded by carbolic acid, for instance. If there is the slightest presence of mucus corrosive sublimate is limited in its penetrating effects. The albumin in the tissues forms with it an insoluble albuminate, which it does not penetrate. I would think the action of corrosive sublimate on the bladder after curetage would be too superficial in some parts and too severe in others; it will not destroy the infecting agents left in the islands that the curet did not remove, and the result of that action reasoned out in my own mind in that way, would not be satisfactory. If the doctor could prove, however, that he can get good results, the proof of the pudding is in the eating.

In this connection I might say that in the treatment of infective cystitis—not tuberculous, but referring now to other forms of infective cystitis, particularly those the result of unclean catheters after operations—I have obtained excellent results by the use of one-half of 1 per cent. of oil of cloves in sterile water. Following the suggestion made by Koch some fifteen years ago, that the tubercle bacillus is crippled by a solution of something like 1 in 10,000 or 1 in 12,000 oil of cloves in water, the clinicians in Germany and elsewhere were very quick to take the matter up, and it has been used, for instance, in typhoid fever and for other internal affections. I have seen it do away with an empyema that I tapped and washed out at the request of a German physician, letting out a quantity of pus, and washing out the chest cavity by nearly filling it with oil of cloves solution two or three times, and then leaving it about half-filled with the same. The patient got well without resection of ribs or without any further tapping.

I have seen the same results in septic joints similarly treated. These cases gave me sufficient confidence to use it as a harmless antiseptic. The average patient can stand about two drachms daily taken internally, without much harm other than a slight diarrhea. I use it in cases of cystitis as a routine measure, and it is usually sufficient to bring the case to a successful end; whereas boric-acid solutions only improve them to a certain extent, and then we have to use nitrate of silver or some more potent agent.

DR. HALL.—Please tell us how you would treat a patient with oil of cloves.

DR. GOLDSPOHN.—In the first place, I fill the bladder as full as the patient can tolerate without marked discomfort, with this solution of oil of cloves, about one-half of 1 per cent., at a temperature to suit the patient, once a day, sometimes only once in two days. The liquid should be well stirred or shaken immediately before using it, as a part of the oil is often not in actual solution, but merely suspended.

DR. HALL.—Do you let it run off right away?

DR. GOLDSPOHN.—I fill the bladder through a glass catheter, then empty it through the catheter, because the urethra would be too sensitive to allow this amount of oil of cloves to pass through it. I fill the bladder again, empty it again, and repeat this process three or four times at one sitting, doing this daily, or every second day, according to the indications of the particular case.

DR. CARSTENS, of Detroit, Mich.—It does us good to have a paper like this, which is somewhat different from what we have had as a general rule. I have no doubt at all that Dr. Cumston has had good results from this method of treatment; still I feel very much like Dr. Goldspohn, that it seems unreasonable to curet the bladder. We cannot curet all of its surface, and, although he does it repeatedly, there are certain points in this organ that certainly cannot be touched or be benefited by the curet. I see these cases after general practitioners have washed out their bladders with this and that agent, and yet they do not get well. A physician a short time ago tried all kinds of treatment for three months in a certain case without effecting a cure. He asked me how I treated such cases of cystitis in the female. I told him that I used permanganate of potash. He then said, "I have tried that, and it does not do any good. My patient would not stand it." I asked, "How much do you use?" He replied, ten or twenty grains to the pint, or something like that. This is too strong —five grains to the quart. I have never failed in treating cases of tubercular, gonorrheal, and septic infections of various kinds with the use of permanganate of potash properly given. The way I do is to have a syringe with a long nozzle which I introduce into the urethra and inject as much of the permanganate of potash into the bladder as the patient can stand. The first time she may not be able to stand more than half an ounce or an ounce. I instruct the patient to hold it as long as she can, then void it. Sometimes she holds it for three minutes and then voids it. You repeat the operation, and after a while she is able to stand a larger quantity of it and is able to hold it a little longer. I keep on increasing the amount until the patient is

able to hold six or eight ounces of the permanganate of potash solution in the bladder for half an hour, perhaps longer, until it is decomposed or some chemical action has taken place. In a few days these patients will stand a much larger quantity, so that I then increase the permanganate of potash five grains to the pint, or ultimately to ten grains to the pint. When this treatment is carried out for ten days the patient is cured. However, I have them keep up this treatment for a month, and use the injections every two or three days. I believe I have had as successful results with that method of treatment as Dr. Cumston has had with the use of corrosive sublimate.

Dr. Edwin Ricketts, of Cincinnati, Ohio.—I have been greatly pleased with this paper, because it is out of the ordinary. I do not think too much stress can be laid upon the point of overdistention of the bladder, it makes no difference what the treatment may be. I was gratified to hear the essayist condemn the double catheter. It is an instrument I have never used, for the reason that I can see no merit in it.

If the entire surface of the bladder is not curetted, the one-tenth or one-eighteenth of surface that is left untouched may cause a great deal of trouble, as suggested by the last speaker, is something that I cannot agree with. The important point to be emphasized is the distention of the bladder every other day until the organ is able to hold as large a quantity of the permanganate of potash as possible, in order to restore the habit, so to speak, of withstanding this amount of dilatation.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I want to ask some of the subsequent speakers to express their views as to the injurious effects in these cases of chronic cystitis from overdistention of the bladder by any method of treatment. When the bladder has been over-distended I have found that not infrequently the object we wish to attain is frustrated. The patient is made worse by over-distention of the bladder in these cases. I am sure that I am not alone in making this statement. All of the text-books remind us of the danger of overdistention of this organ. I believe that moderate distention of the bladder up to the point that the patient feels a discomfort is about the limit of safety. I hope the subsequent speakers will speak of overdistention of the bladder, either condemning it or indorsing it.

Dr. Charles Greene Cumston, of Boston, Mass.—In all of the cases where I curet I drain the bladder with a Pezzer sound, the time varying from ten to fifteen days, sometimes longer. Sir Henry Thompson, in whom I have great faith; Mr. Reginald Harrison, who is also a genitourinary surgeon of great reputation, and no one can

doubt the vast experience of Guyon, of Paris—all universally cry against irrigation of the bladder. They all universally condemn distending the bladder in every case of cystitis, and in my paper the point I wished to bring out was that the bladder was put at rest after operative interference, just as we would splint a leg after an operation for tuberculosis of the knee-joint. I drained every one of my cases. Perhaps drainage did more good in some of the cases than the curetment. I have endeavored to cure cystitis by the use of permanganate of potash, used in very weak solutions, after the manner suggested by Dr. Carstens, and I believe there is nothing better for a certain class of cases. But the cases reported in my paper were treated with instillations of corrosive sublimate and curetment as a last resort.

Dr. James T. Jelks, of Hot Springs, Ark.—Many of us are inclined to treat the bladder harshly in dealing with this inflamed organ. I want the Fellows to bear in mind the one fact that the bladder is always full, and that you can fill it with one dram of water as much as you can with one pint. Sir Henry Thompson demonstrated years ago that if we wanted to wash out the bladder we should in using a pint of water divide it into eight or sixteen doses instead of making one injection of it. This is an important point. One ounce of water is all we need to wash out the bladder. If we want more water injected into it we can use another ounce, and continue doing this until the fluid comes out free from contaminating discharges.

I wish to congratulate the author on this method of treatment. I feel disposed to try it when I get home. I have been accustomed to putting these bladders at rest with the buttonhole of Emmet. This gives us an opportunity to treat the bladder without the use of the curet. It gives us an opportunity to see very readily what is in there through any kind of speculum, and by means of this rest my cases have recovered.

I have pursued another line of treatment with success—viz., dilatation. One treatment has cured many of my patients, especially those women who are in the habit of urinating every hour during the day and every two hours at night, with great pain before, during, and after urination. In many of these cases I have found an ulcer at the neck of the bladder. Dilatation of the urethra with a steel sound, with one application of carbolic acid, has cured many of these cases. I have had these patients come back after one such treatment and say that they were cured. If we can cure these patients by dilating the urethra with a large steel sound and using applications three or four times, I do not see the necessity for curetage.

I indorse what Dr. Carstens has said with reference to the use of

permanganate of potash. It is an invaluable remedy for any infective disease of the bladder, especially gonorrheal infections. A solution of 1 : 6000 is strong enough to begin with.

Lastly, I wish to say to Dr. Cumston that I shall practice his method if the use of steel sounds and the buttonhole method do not cure my next case.

Dr. T. J. Crofford, of Memphis, Tenn.—I have not had a very extensive experience in the treatment of cystitis in the female, but I have performed the operation of curetage of the bladder a number of times. I do not know whether in the cases reported by the essayist the disease was general or confined to the neck of the bladder. If the inflammation is confined to the neck of the organ or thereabouts (and most of the chronic cases are), I do not see any great difficulty in cureting all of the surface. I do not see that we would necessarily leave any islands there untouched. When the disease has been confined to the neck of the bladder, I am satisfied that I have gotten good results from the use of the curet.

As to the distention of the bladder causing pain, etc., I think very much depends upon the complications. If there be a pericystitis or further complications than an inflammation of the mucous membrane of the organ, I do not think the bladder would tolerate distention as much as it would when there is an absence of such complications.

There is another point in the paper in which I was very much interested, and that is the tubercular variety of inflammation. In these days of serum-therapy one will get to believe that he cannot cure a localized tuberculosis of an organ unless he brings about a condition of immunity against it. This I believe very strongly. This condition of immunity comes, in my opinion, without any serum-therapy or without any special treatment if we can guard against mixed infection and complications and build up the patient by means of good food, etc. Senn, in his recent work on *Diseases of the Genitalia*, both in the male and female, paints a gloomy picture for those cases.

I am very much in favor of curetage when the disease is confined to the neck of the bladder, and I believe we can curet this portion of the organ as thoroughly as we can the interior of the uterus.

Dr. A. Goldspohn, of Chicago.—I do not wish to be understood as opposing curetment of the bladder *in toto*, but I believe it ought to be done under the guidance of the eye or tactile sense, and the former is now possible by the use of a new urethroscope gotten out at Rochester, N. Y. The instrument is provided with an electric lamp which does not generate heat. The difficulty heretofore has been that the light generated too much heat for use, and the instrument had to

be cooled. The new instrument does not require cooling, for the reason that it does not generate heat enough. It can be used inside of the body without causing any harm. The light attachment is at the inner opening of the tube, and it illuminates the bladder nicely without detriment to the patient, and makes the tube available to operate through.

DR. CUMSTON (closing the discussion).—In speaking of the pathology of bladder lesions, I pointed out that they were almost always situated in the trigonum, consequently this is the portion the surgeon wants to get at. I stated in one of my conclusions that when the diseased process was scattered all over the bladder, a suprapubic cystotomy was the operation of choice, and that curetment of the organ would not do any good. Every one of the cases I have reported was examined cystoscopically. Two were tubercular lesions of the bladder, while in one the patient had both a tubercular bladder and tuberculosis of the lungs. At first she was urinating every fifteen minutes, and with instillations of corrosive sublimate alone I got her to urinate every two or three hours.

As to the treatment of tuberculous cystitis with oil of cloves, I have had no experience with it. I have heard of it being used in tuberculosis of other organs.

I do not know that anyone has ever put on record the treatment of tubercular ulcerations of the bladder with lactic acid, but I was led to use it from my observations that tubercular ulcerations of the bladder were similar to those seen in the larynx, and I knew that laryngologists were very fond of lactic acid in the treatment of laryngeal tuberculosis. So one day along came a patient, fourteen years of age, whose parents were healthy and in the best of condition. The house and all surroundings were likewise healthy, but this child was passing water practically all the time. The physicians could not come to any conclusion regarding the nature of the case. Some said it was a neurosis. The child began to develop pain. I administered ether, cystoscoped her, and found two or three little ulcerations in the trigonum. The parents wished me to try local treatment before I did anything radical, and so it occurred to me to use lactic acid in this case. I gave a number of local applications; the child stood the use of the cystoscope very well after I had dilated the urethra to introduce the instrument. By doing this every day or so the bladder got rest by the constant drainage. I would not like to say how many applications I made of the lactic acid, but the treatment was kept up twice a week for about eight or nine weeks, and I cured the child with that treatment alone. This was four years ago, and she is per-

fectly well today. This is the only case in which I have used lactic acid.

In the second case reported I resorted to cureting, and the patient recovered.

As to the question of what we can feel, it was said this morning that distinguished operators like Price, Deaver, and others do their best work with the sense of touch and sense of sight. I say the same thing of the bladder.

Referring to the analogy of curetment of the uterus and bladder, with a proper curet the operator will not curet the mucous membrane in strips any more than he would the uterine cavity. When we curet the uterus, in 99 per cent. of the cases we leave some of the endometrium in the cavity, consequently if we leave a few strips of the mucous membrane of the bladder in an inflamed condition I apprehend that there would not be much trouble, as what is left by the curet will assume a normal condition. At any rate, my results have been satisfactory.

As to the use of carbolic acid in cystitis, I should be afraid of it. I do not think any bladder will tolerate it more than once, even if it were used only in the strength of 1 in 1000. All I can say is, the proof of the pudding is in the eating, as has been remarked by Dr. Goldspohn. I have been surprised to see how much suffering can be relieved by instillations of corrosive sublimate, and in some cases, when it is combined with curetment and drainage, the results are excellent.

NOTES ON FOUR CASES OF PERFORATED GASTRIC ULCER, WITH REMARKS.

By HENRY HOWITT, M.D.,
GUELPH, ONTARIO.

My experience with perforated gastric ulcer is too limited for me to attempt a paper covering the whole field. It is my object, therefore, to call your attention principally to some points which have impressed me as being important when certain conditions are present. The complications with which the surgeon may have to contend are very numerous, and if happily anything in this production throws a ray of light useful in the management of one of them, I am amply repaid.

In all, four cases of perforation of the stomach by gastric ulcer have come under my personal observation. Two of them occurred years ago, before the technique of the operative procedure for it was commonly known, and they were treated in accordance with the custom of that time, with the invariable result—death. The other two are of more recent date, received surgical aid, and recovered.

The first one given in the notes below is a good illustration of how exceedingly chronic the progress of the ulcer may be, while the second shows how acutely and with what little warning it may lead to disastrous results. The third is an example of a perforated ulcer in which the complications are few and the operative technique comparatively easy, but the fourth is one having numerous complications difficult to master within a reasonable time.

Case I.—R. M., married, aged thirty-four years, a farmer, who had retired on account of ill health, was admitted to St. Joseph's Hospital on June 14, 1885. He had been healthy and robust until his twenty-fourth year, before which time he had never lost an hour through sickness. His direct family history was excel-

lent, but distant relatives on maternal side probably died of tubercular disease.

At first the patient's symptoms were those of ordinary dyspepsia, but gradually in time he had attacks of intense gastralgia, which generally, though not always, came on about an hour after meals. The chief site of pain was a point a little below and to the right of the ensiform cartilage. The pain radiated toward the right, but never into the back, and when severe was of a burning or tearing nature. The attacks of intense suffering often lasted without a remission for hours, forcing the patient to resort to opiates. Vomiting was generally followed by marked relief, and the vomitus was always very acid. He had periods of comparative ease lasting for a week or longer, but never complete freedom from gastric disturbance. In spite of the various regular and irregular remedies, the remissions became less frequent and the attacks more severe and prolonged till he had to retire from his farm. In April, 1881, he had a severe attack of hematemesis. It left him very weak, and he was confined to his room for six weeks and sustained by rectal enemata. Probably owing to greater care in regard to diet, for nearly a year the symptoms were less severe in character. Then, notwithstanding every precaution, the gastralgia slowly returned. A year before his admission to hospital regular attacks of vomiting became a marked feature of his case, and he began to decline in weight. Everything he took, no matter how bland, caused gastric disturbance.

On admission he had all the signs and symptoms of pyloric obstruction—viz., dilated stomach, constipation, small daily amount of urine, and sarcinæ and yeast fungi in what was ejected from stomach. Under treatment, consisting of daily lavage, strict regulation of diet, and small doses of strychnine, he began to make some headway ; but two weeks after his arrival he was suddenly seized with a rigor, pulse rose to 130 and temperature to 103°, intense burning pain, and marked rigidity of upper portion of abdominal wall—in short, all the symptoms of local peritonitis. For three weeks he remained in a critical condition, then improved. He left the hospital early in September very much improved, being able to take without discomfort solid food, provided the stomach was washed every other day, and he gained in weight rapidly. A year later he reported that he had only to use

the stomach-tube once or twice a week, had no dyspeptic trouble unless he partook of certain articles of food, and had gained forty pounds in weight. His condition remained good until the autumn of 1889, when he was suddenly seized with intense pain in the epigastrium, followed by general peritonitis, and he died within twenty-four hours after the onset.

A post-mortem revealed many old adhesions at and near pylorus, great thickening of the tissues of the parts, and a perforation of stomach on anterior wall close to pyloric valve.

Before he left the hospital I asked him, somewhat timidly, however, to consider the advisability of submitting to an operation, with a view of relieving the stenosis, and had he consented it is possible his life might have been prolonged. Certainly, with the knowledge of today, his chances would have been excellent.

The next case completely nonplussed me at the time, and there are features connected with it that are far from being understood by me at present. If similar cases occur there is danger that even the most acute diagnostician may fail to diagnosticate before the opportune hour for action has passed.

CASE II.—Miss T., aged twenty years, a prepossessing young woman, who had never been ill since childhood, and who presented every outward indication of health and vigor. She had lived all her life in the country, and was no stranger to early hours and arduous work.

On July 27, 1886, when assisting a relative who was indisposed, she had, in addition to ordinary duties during the afternoon, entertained a suitor for her hand. After the evening meal, while preparing her toilet for a proposed visit, she suddenly cried out as if in terrible agony, exclaiming, "I am dying!" and fell heavily upon the floor. A messenger was at once despatched for medical aid. On my arrival, an hour and a half afterward, she was sitting on a rocking-chair, surrounded by the family and a number of excited neighbors, and swaying herself rather violently backward and forward; all the while she continued to exclaim, "I am dying!" Learning from the family how she had spent the day, being informed that she was menstruating, finding the pulse only 75 and the temperature normal, the conclusion at which I arrived was that we had merely to deal with a nervous explosion.

The family was told that there was no cause for alarm, that

there was no necessity to summon her own people, and that in a short time she would be herself again. After prescribing the usual antispasmodics, I was about to depart, when she ceased her swaying movements, turned toward me, and said, in a calm, impressive manner, "*Doctor, I am dying.*" She was taken to her room, to which she walked, and I made a careful examination. Perhaps my mind was biased by the condition of her pulse and temperature and her general appearance. The examination revealed nothing further to me, except that there existed tenderness to pressure over the left iliac fossa. All the while she continued to repeat the exclamation to which I have referred. There was no noticeable rigidity of the abdominal walls nor any vomiting. Being quite satisfied that her complaint was hysteria, the friends were advised not to show her too much sympathy. After my departure she became quiet, and the family retired. No one had occasion to visit her room during the night. In the morning she stated that she felt better, sat up in bed and took a bowl of oatmeal porridge and milk, reached over and placed the empty bowl on a table near by, gave an agonizing scream, fell backward, gave a few gasps, and expired.

Post-mortem six hours after death revealed milk and oatmeal free in peritoneal cavity, and a perforation near middle of posterior wall of stomach. The ulcer had smooth, glistening walls, and was sufficiently large to admit the point of my index finger. The base of the ulcer was partially covered with a veil of torn peritoneum. There was very little thickening of the parts around ulcer, and no evidence of peritonitis in abdomen. All the other organs of abdomen were normal.

In this patient when did the rupture occur, before my arrival or next morning after she had taken the porridge and milk? It is a moot question, for there are circumstances which favor both theories.

CASE III.—Miss E. H., aged fifteen years, an anemic girl, the daughter of a country hotel-keeper, was admitted to St. Joseph's Hospital on February 16, 1898. For upward of six months she had presented many of the symptoms of gastric ulcer. She had vomited pure blood on several occasions, though never a large quantity at one time. The pain, which generally came on immediately after meals, was referred to the epigastric region, in which

there was no particular site more sensitive than others. Owing to her environment she had had but indifferent attention, and, for the same reason, it has been impossible to obtain complete notes relating to the early history.

At noon of the day previous to her admission she ate a more hearty meal than usual. A few minutes after leaving the table she slipped on some snow or ice, and immediately complained of severe pain in the epigastric region, but the duration of the attack was brief. Half an hour later it suddenly returned with such intensity as to produce all the symptoms of severe shock.

Dr. W. J. Robinson was called and arrived four hours after the onset, and, though he found the temperature under the tongue normal, the pulse was rapid, the surface of the body pale and cold, abdominal walls rigid, and patient in agony. The pain was now referred to a large area around the umbilicus. The doctor at once recognized the serious condition that existed and advised her removal to the hospital; but the night was cold and stormy, the roads almost impassable, the distance considerable, and the family averse to immediate action. He gave sufficient morphia to deaden the pain and requested to be informed of any change for the worse. He was called early the next morning and found her symptoms very grave, and insisted on her removal, but it was late in the afternoon before this could be done.

That evening I saw her in consultation. She was certainly in a critical state and not a good subject for the only treatment that offered an avenue of escape. The symptoms were as described above, except that the temperature had risen to within a point of 102°. There was neither marked distention nor evidence of free gas in the peritoneal cavity.

At nine o'clock, or thirty-two hours after the commencement of the attack, our preparations were completed. The stomach was siphoned and washed immediately before the patient was taken to the operating-room. On opening the peritoneal cavity a considerable quantity of cloudy serum escaped which had a decidedly sourish odor and which gave the characteristic acid reaction to blue litmus-paper. The peritoneum was congested and the vessels of the anterior wall of the stomach and gastrocolic omentum were greatly distended. A small perforation was found an inch above the greater curvature near the splenic end on the anterior surface,

to which a tag of omentum was loosely attached. On the tag and about the perforation were patches of organized lymph ; these were easily removed with a sponge. There was very little thickening of the stomach wall about the ulcer. The perforation, at least on the peritoneal surface, was minute. It was closed with fine silk, which included the peritoneum and part of the muscular coat. The part was covered by attaching an omental flap. The peritoneal cavity was thoroughly flushed with saline solution, and the abdominal cavity closed without drainage.

She was nourished wholly by rectal enemata for a week, after which time suitable food was gradually added by the mouth. The after-history was uneventful, except that her recovery was prolonged by phlebitis of the lower extremities, which set in about the fifteenth day. She left the hospital at the end of the sixth week. Since then her health has been good and her stomach has given her no further trouble.

CASE IV.—T. McC., aged twenty years, born and brought up on a farm, was admitted to the Guelph General Hospital on February 19, 1900. The paternal side of the family history is excellent, but on the maternal side there is ample evidence to make sure that his mother has, and his grandmother has had, gastric ulcer, though in all other respects this branch is exceptionally good.

The patient when only two years of age began to have trouble with his stomach, and from that period of his life till his admission to the hospital he suffered more or less from gastric disturbance. The pain was generally more severe an hour after taking food. He always suffered more in winter than in summer. Up to late years there were periods of longer or less duration during the hot season in which he could take almost any article of ordinary food without much discomfort. Cheese, potatoes, and fruit, especially that containing small seeds, caused more distress than any other nourishment. Attacks of severe gastralgia were of frequent occurrence ; these were often relieved by vomiting. What he vomited was intensely acid, but never at any time contained blood.

For two years previous to his admission the attacks were more frequent and severe, there were no periods of entire freedom from gastric distress, and he had to limit his diet practically to raw

eggs and milk. He described the pain as being of a burning character, and referred it to a small area below and to the right of the ensiform cartilage; when severe it radiated toward the right, but never into the back. Pressure over the part always caused pain.

It is well to note here that early in May, 1898, he had an attack of appendicitis which necessitated a rest in bed for a week.

From the commencement of his gastric ailment I saw him occasionally at irregular intervals. He called at my office on the 10th of last February. On this occasion he had added to his former symptoms most of those peculiar to dilatation of the stomach from pyloric stenosis, including the splashing sound on palpation and the characteristic vomiting. He could not bear now the slightest pressure over the tender area to which reference has been made, and he was losing flesh rapidly. His face was pale and pinched, and the body showed absence of youthful rotundity.

It was apparent that radical steps were urgently required in order to avert disaster, but his family feared to consent. During the night of the 18th he had an unusually sudden and severe attack, in which the pain not only radiated toward the right, but also downward to the umbilicus. Subsequent events favor the view that at this time slight leakage of contents of the stomach took place. He afterward stated that the pain now felt as if he had a bar of hot iron inside burning the tissues. From this date he was unable to take any nourishment by the mouth without causing agony. Still the family hesitated to consent to operative measures, nor was I informed of the new developments.

At five o'clock on the morning of the 20th the pain suddenly became unendurable, and I was called and driven to the house, arriving there in less than an hour. The abdominal wall was as rigid as possible, surface of the body cold and clammy, respiration superficial and quickened. He was lying prone upon his back and apparently afraid to move a muscle, and even when answering a question did not turn his head. I was somewhat puzzled, on taking his pulse and temperature, to find the former only 75 and the latter normal. The other symptoms, and the remembrance of Case II. above, saved me from underestimating the true state of affairs. At the outset the chief site of pain was above the umbilicus, on my arrival at the cecum, and an hour afterward at the

pelvis. While preparations were being made for his removal to the hospital, fully three grains of morphia were given without any apparent relief.

At half-past ten that morning he arrived at the hospital, by which time his pulse had risen to 120, his temperature to 101°, and the hepatic dulness had disappeared. His agony was so intense that he continually urged us to hurry with the necessary preparations. Before taking him to the operating-room the stomach was siphoned and washed. A quantity of dark fluid was removed from it. A hypodermatic of strychnia was given and the operation commenced an hour after his arrival.

The tension of the abdomen was so great that the tissues appeared to tear before the knife. The incision at first extended from near the ensiform cartilage to the umbilicus. On nicking the peritoneum, gas escaped with an audible sound, followed by a large quantity of fluid which to sight resembled the mixture of pus and serum which is frequently found in large abscesses of appendicular origin, but without the offensive odor. When the peritoneal opening was extended to the full extent of the incision, the whole field was occupied by the transverse colon, which was enormously distended by gas. The abdominal wound was enlarged so as to reach to within two inches of the pubis, and an attempt was made to draw the colon out of the field, but this was found to be impossible. Finding that it was impracticable to proceed while this state of affairs remained, sterilized gauze was packed around the portion of the bowel exposed, and an incision fully three-fourths of an inch long was made in it. A large quantity of gas and some fecal matter escaped, and by the aid of the hand the entire colon was emptied. When the bowel contracted the cut was merely a small perforation, which was easily closed with a few silk sutures.

When the colon collapsed the remains of a ruptured abscess cavity were exposed immediately below the transverse portion, the walls of which were formed by coils of small intestines, colon, and omentum. The organized fibrin which bound these together was undergoing retrograde changes, for the adherent organs were readily separated and the patches for the most part were easily rubbed off, but some had to be pulled with the fingers, and a few were too adherent to permit of this, and were left. The small intestines and a part of the colon were now eviscerated and protected. This

procedure exposed pools of pus, especially in the flanks and pelvis, the latter being almost filled with it. After thoroughly cleaning the abdomen and pelvis with saline douche and gauze sponges, attention was directed to the stomach, which was now examined under very favorable circumstances, for we had relaxed walls and sufficient room in which to work.

A perforation was found, apparently on the anterior surface of the pylorus close to the valve, the caliber of which readily admitted my little finger. To me it appeared as if the internal opening commenced at the stomach side of the valve, then tunnelled obliquely toward the right and emerged on the surface of the pylorus. It was difficult to determine its true situation, owing to the greatly thickened and altered state of the parts. The walls of the ulcer were smooth and glistening, and the pylorus and adjacent portion of the stomach were very much thickened, nodular, and dense. To touch and sight the part exactly resembled that produced by carcinoma in this region. There were numerous adhesions, which rendered the pylorus but slightly movable. Notwithstanding the stomach had been recently washed, dark, grumous fluid oozed through the perforation when any pressure was made on it.

The walls of the ulcer and the surrounding tissues were too dense to permit of the aperture being closed with sutures. An elliptical section an inch and a half in length, running in the long diameter of the part and having the ulcer in its center, was removed. The wound was closed with two rows of interrupted sutures and covered with an omental flap. The peculiar course of the ulcer and the contour of the surface would not permit of the section being made in any other direction.

Gastroenterostomy was now a necessity. The upper portion of the jejunum was brought up, and, after allowance had been made for all possible movements without producing tension of the proximal arm, it was attached to the anterior surface an inch above the line of greater curvature and at a respectable distance from the changed tissues of outlet, by means of a Murphy button. The button, contrary to general advice, was supported by a row of interrupted silk sutures. Now, here is a procedure to which I desire to direct attention, for it is my opinion that it will overcome several untoward effects that have hitherto frequently proved detrimental after gastroenterostomy. The proximal arm was made

fast with a few sutures to the stomach, an inch or more to the right and a little above the line of the button. This does away with the usual acute angle in the bowel, prevents contents of the stomach from entering the upper arm, and favors the current from later following the natural channel.

Before the bowels were returned to the abdomen each flank at the back and the lower abdomen at the outer side of the right rectus muscle was pierced and rubber tubes inserted. The tube near the pubis reached to the bottom of the pelvis. The abdominal wound when closed was dressed with dry sterilized gauze and sealed with collodion to prevent infection from the discharge of tubes.

Naturally the shock which followed was severe, the pulse at one time reaching 160, but the application of heat and injections of strychnia and normal saline solution carried him through. At one time toward the middle of the second day his temperature rose to 101.2°, which is the highest point recorded on his chart. By the fourth day both temperature and pulse were normal, and afterward, in spite of a serious accident, remained so. No vomiting occurred. For the first week, except an occasional sip of water and the fluid part of oyster broth, he was nourished wholly by rectal enemata; afterward suitable nutriment was gradually added by the mouth. The drainage-tubes proved to be of service, for the amount of discharge was considerable, especially from the one in the lower abdomen. They were all removed by the fifth day. For a time the discharge had an offensive odor.

The sealed dressing was opened on the seventh day, when the wound looked so well that all the sutures, except two at the umbilicus, were taken out. Three hours later the patient had a fit of sneezing and tore the wound open from the upper angle to the umbilicus. The contents of the abdomen protruded, exposing the site of anastomosis. Fortunately the nurse in charge at once grasped the needs of the situation, removed the dressing, and covered the exposed parts with gauze wrung out of hot normal saline solution. An hour after the accident I closed the wound without anesthesia, and no ill effects followed.

He went home on April 14th, gained rapidly in weight and strength, and in a short time was at work on the farm. He spent the greater part of June at our artillery brigade camps, acting as

despatch carrier for one of the commanding officers, and spent hours each day on horseback.

Since the operation, although he has been as careless as possible about his diet, he has never had the slightest symptom of his old trouble. The other day, in answer to a question, he said, " I can eat any mortal thing." He has had two severe attacks of colic in the cecal region, lasting on each occasion only a few minutes and then suddenly passing off. The button has never been seen, and whether these were produced by it at the cecal valve or by other causes is a matter yet to be solved. The X-ray would easily decide.

I have thought it well to limit my remarks to the headings given below. They are six in number. The first two relate to phases of the subject before perforation takes place, and the remainder to certain conditions that may arise from its occurrence.

Do Symptoms before Rupture Indicate the Site of Ulcer? Undoubtedly not always, for there are cases in which literally none exist. They do, however, when the ulcer is situated at or near the pylorus, provided the progress is not unduly acute. My notes tend to indicate that when the situation is on the anterior surface adjacent to the outlet, no matter how intense the pain may be, it never radiates into the back, but often toward the right, and that pressure below and to the right of the ensiform cartilage produces pain. It is natural to infer that an ulcer in the same situation, but on the posterior wall, will be less sensitive to external pressure and the pain tend to radiate into the back. In both instances, when encroachment is made on the lumen of the pyloric orifice, we have in addition almost if not positive indications as to the situation. Beside these, we have also in the early stage the time that elapses after food is taken before disturbance arises. If the pain be aggravated immediately food is taken, the natural inference is that the trouble lies near the cardiac orifice. Other situations of the ulcer cannot be definitely ascertained by symptoms.

What Conditions Justify Operative Measures? No surgeon of experience in abdominal work should for a moment hesitate to advise early operative measures before perforation to a patient who has symptoms similar to those recorded in Cases I. and IV., nor should he act otherwise when a patient has frequent and prolonged attacks of gastralgia accompanied with vomiting, especially if there be a history of hematemesis.

AFTER PERFORATION. *The Danger of Being Misled by Pulse and Temperature.* There are many instances on record in which the true condition of affairs in abdominal troubles in the early stage have been overlooked by the medical attendant trusting too much to the pulse and temperature. This is more apt to take place when shock is a factor. My second and last cases fairly well illustrate how readily a mistake may be made when these are given undue prominence in summing up. The absence of increase of temperature is not difficult to understand, nor should the state of pulse be when we recall to remembrance that in shock from abdominal injury it may at first be slow. We can comprehend how an error may be made if the doctor arrives at that stage when both are practically normal. The less a medical man trusts to them in this particular line and the more to other signs and symptoms the fewer mistakes will happen in his practice. They are, however, important when taken in connection with the other symptoms and recent occurrences.

A week ago today I was called to see a stout lady who had, three hours previously, fallen heavily on the edge of a high milk can, which caught her across the upper and left side of the abdomen. There was no external evidence of the injury, her pulse only 75 and its qualities good, but the thermometer under the tongue would not rise over 95°; and this fact, together with rigidity of abdominal walls and general appearance of patient, determined us to operate. In the interpretation of the symptoms at the consultation held previously, internal hemorrhage was excluded as being an impossible complication. Now mark our infallibility! The abdomen was found filled with blood, the source of which was a rent in the spleen.

The Advisability of Enterotomy and Evisceration in Certain Conditions. When the intestines are distended with gas or liquid fecal matter, especially when the site of trouble lies deep and room is required to carry out the necessary steps of the operation, I am a firm advocate of enterotomy and evisceration. It is impossible to work to advantage when the abdominal tension is great, and these procedures at once change the whole aspect and give us flaccid walls and ample room.

Distention of the colon only requires one opening to collapse it, but when the distention is great and confined to the small gut two

or more punctures may be required. It is well to close each one before making another, because it is difficult to protect two at the same time. In a patient of mine no less than four enterotomies were required, yet no ill effects followed. It has been resorted to frequently in my practice for over ten years, and always with beneficial results. The opening becomes a small puncture when the bowel contracts, and is easily closed with a few sutures. Permit me to quote from a paper which I read before the Trinity Medical Alumni Association of Toronto in April, 1898, on "Intestinal Obstruction": "The advantages claimed for this procedure are not by any means confined to the improvement of the field as regards room in reaching and dealing with the cause of obstruction. It removes the tension that leads to impaired circulation in the parts, renders functional activity again possible in the important organs affected, gives the over-distended muscular coat time and opportunity to regain tonicity, and, what is worthy of note, removes from the system offensive, effete matter and myriads of pathogenic germs."

Evisceration of the bowels or a portion of them is important when, as is not infrequently the case in operative work for gastric ulcer, the part lies deep and adhesions prevent it being brought up. Many speak against exposure of the intestines, but to me there is far less danger in pulling them out and protecting them with sterilized gauze, which is kept warm by irrigation, than by the continual handling necessary to keep them out of the field. In a case of perforation of the stomach with escape of the contents, all parts of the abdomen are quickly invaded by septic material. It is incomprehensible to me how the toilet may be done without resorting to it.

When Gastroenterostomy is Required, the Method of Doing It. The function of the pylorus, both in gastric and duodenal ulcer, is not unusually more or less impaired, either by inflammatory products or by the contraction with which the healing process is attended. Adhesions and the desperate state of the patient place pyloroplasty and pylorectomy out of the question, and we have to resort to gastroenterostomy after closing the perforation. No method known to me has so many good qualities as that advocated and practised by our talented and distinguished Fellow, Dr. J. B. Murphy, of Chicago.

By stitching the proximal limb of gut, as done in Case IV., the acute angle at the button is overcome, and, I believe, undesirable effects avoided.

Posterior gastroenterostomy has probably given better results than anterior, but occasionally circumstances will arise in which either adhesions or the element of time will compel us to adopt the latter.

The Necessity of Injecting a Nutritive into the Jejunum and a Cathartic into the Colon during the Operation. As a general rule, our patient, before perforation takes place, by reason of long-continued suffering and inability to retain food in the stomach, is not only reduced in weight, but has all the vital powers at a very low ebb. Then, too, for days after the operation no nutriment can be given by the mouth, and that administered by the rectum is too slow of action to be satisfactory in supporting life through the shock which follows. Beside, from long use for such purpose, the rectum may have become so irritated as not to retain anything. For reasons which are evident, constipation is not uncommonly a factor, and in regard to it also ordinary methods of relief are out of the question.

Any device by which sufficient nutriment may be quickly introduced into the active portion of the alimentary canal to tide the patient through a critical period cannot be otherwise than beneficial and, therefore, necessary. The beneficial effect of an active fecal circulation in the canal after intra-abdominal operations is an admitted fact. Then the same argument holds for a procedure which will accomplish early fecal evacuations. Both procedures may be accomplished in a few minutes in the course of an operation, by means of an apparatus like that used for introducing normal saline solution, only the needle should be of greater caliber.

Last August it was my lot to be called upon to operate for gastric ulcer before perforation under exceedingly unfavorable circumstances. The patient, a young lady, was worn out by almost continuous retching, severe pain, and loss of sleep. Nothing had been retained on the stomach for over three weeks, and no food given for over two except by rectum, and the latter avenue had been impracticable, owing to irritability, for some days. A pint of peptonized milk was injected into the upper portion of the jejunum and an ounce and a half of sulphate of magnesia in solu-

tion into the ascending colon. Though the patient was lost through an untoward event, the beneficial effects of the procedures were so evident that should I meet with corresponding conditions in the future they will be considered not merely advisable, but an essential part of the operation. It is my belief that in at least a limited number of abdominal operations one or a combination of both procedures may so govern the result as to ward off death.

DISCUSSION.

DR. RICHARD DOUGLAS, of Nashville, Tenn.—Mr. President: I have had no operative experience with gastric ulcer. Unfortunately, I have had cases with perforation, and recall two cases in which I urged operation, and while preparations were being made to operate on one of them the patient died. The other patient refused operation. He died. Post-mortem examination revealed perforations in both of these cases. In one the ulcer was situated on the posterior wall of the stomach, in the other the lesser curvature. I should be very glad to educate myself up to the point of having enough courage to operate on these cases before perforation has taken place—that is, in those cases where the symptoms of gastric ulcer are unmistakably present. I feel sure that I have cases now under observation that unquestionably have gastric ulcer, and if I should carry out the teachings of Dr. Howitt I would go home and operate upon these patients. I am a little inclined to follow his advice. I have been impressed with the idea that gastric ulcer very frequently heals. I believe that is true. We meet with many young women who have had gastric ulcer and who are now perfectly well.

Postmortem examinations often reveal many cicatrices at the site of former ulceration, and it is only a small percentage, variously estimated from 6 to 15, of the cases which result in perforation.

The cause of gastric ulcer has always been an interesting problem to me. Whether it is due to a nutritive disorder, embolic necrosis resulting from some obstruction to the arterial supply and subsequent digestion of the stomach, or whether it is primarily a tubercular ulceration, I cannot say.

I was very much impressed with one point in the technique, namely, that of anchoring the proximal side of the gut to prevent kinking. While it is hardly germane to the subject, I had occasion recently to anastomose the gall-bladder with the intestine, and I lost my patient

from acute kinking of the bowel at the site of anastomosis. The patient died from intestinal obstruction.

I believe the point made by Dr. Howitt is well taken, and I regard it as one of the most important features of the paper.

I have been very much instructed by the paper, and I desire to express my thanks to the author for it.

Dr. James F. W. Ross, of Toronto, Canada.—I have had one case of perforating gastric ulcer successfully operated on, and that is one of the principal reasons why I rise to speak on this subject. I would like to compliment Dr. Howitt upon his excellent paper. I know of no one who has had better results than he has had.

The one point I would like to emphasize is this, that there is no physician or surgeon living who can diagnosticate gastric ulcer in some cases. The case I operated upon did not know that there was anything seriously the matter with her. After partaking of supper at seven o'clock in the evening she went out for a walk, and suddenly became prostrated on the sidewalk, so that it was necessary to carry her into a neighboring drug-store. A physician near by was sent for, who gave her some water, which she drank. She presented an appearance which made him suspicious that there might be a perforation of the stomach. He asked me to see her. I saw her, and came to the conclusion, after noting the rigidity of the abdominal muscles (alluded to by Dr. Howitt as one of the most important signs) and sudden pain in that neighborhood, that there was something wrong inside, probably a perforating gastric ulcer. I therefore went home, got my operating satchel, went to the house, and operated by lamplight in the parlor at three o'clock in the morning. The onset was so sudden that I insisted on having the mother come in to see the forceps pass through the perforation in the stomach at the time of operation, so that she would be satisfied that it really existed. There was a good deal of discharge, which we mopped out very thoroughly, introduced a small glass drainage-tube, left it there, and closed the opening carefully. This case was seen at a time when we used drainage more frequently than we do now. The girl recovered. Her pulse was not particularly rapid, corroborating what Dr. Howitt said. The pulse in these cases is slow at first, but may become suddenly rapid. This is the only case of gastric ulcer upon which I have operated.

In looking up the literature of the subject at that time, I found that the only cases that recovered were those in which operation was undertaken early, and on that account I differ from Dr. Howitt in his opinion regarding the advisability of operating on every case of gastric ulcer—that is, operating before perforation. Even if the case

is a bad one and hemorrhage has taken place we should withhold our hands under such circumstances for the reason that we do not know that there is a perforation. When once perforation has taken place we can see at once where the ulcer is situated. Before a perforation has taken place I should be afraid to exsect the site at which an ulcer is situated, even if we can find it, as a matter of routine practice. We can readily take a piece out of the stomach, can fasten the walls together again, and, with our modern aseptic methods and a little gauze drainage, we can perform a very safe operation upon the stomach just as we can open into other parts in the abdominal cavity, but we must always remember that such operations are not devoid of danger. Many cases of gastric ulcer recover after having suffered from very severe hemorrhage, and after having suffered from severe pain for many months. It seems to me that there must be some difficulty in finding such ulcers before perforation has taken place to indicate the exact location. If the profession is made thoroughly aware of the necessities for early operation on cases of perforated gastric ulcer, and if such operations are done early, there is no doubt that a great many can be saved, even after the stomach wall has been broken through. I certainly think that it is unwise for the Association to urge members of the profession to operate on cases of gastric ulcer for either hemorrhage or pain.

Dr. Charles Greene Cumston, of Boston, Mass.—I wish to make one or two remarks about the diagnoses which have occurred to me. Those cases that have severe hemorrhages are less likely to have perforation. In the few cases of perforated gastric ulcer that I have seen, with the exception of one, the lesion was unrecognized before the occurrence of perforation. I recall a very remarkable case that came under my observation at the Polyclinic in Geneva, and whether it will throw any light on the pathology of gastric ulcer or not, I do not know. This patient had one gastric ulcer and also a similar ulcer situated in the posterior vaginal wall near the cervix, discovered at autopsy, *both ulcers being of the same histologic composition.* Both were of embolic origin, associated with arterio-sclerosis. In the cases I have seen myself and in connection with others it has been difficult to find the perforation. I have not seen a case yet where the perforation was immediately found when the abdomen was opened. The ulcers have always been bound down by adhesions. I recall one case in which it was difficult to make out where the orifice was; the ulcer was situated in the posterior wall, and some of the stomach contents was leaking down. By injecting water with methylene-blue in the stomach the opening was discovered. I have not seen a gastroenter-

ostomy done in these cases. In three instances excision of the border of the ulcer was considered sufficient, and the perforation closed.

Dr. W. E. B. Davis, of Birmingham, Ala.—This subject is of great interest. My experience in this line of work is limited. I have never operated for perforating gastric ulcer. I have had two cases upon which I should have operated, as the symptoms were sufficiently marked and indicative to warrant an operation. I remember to have had one case in which an abscess followed an ulceration of the stomach, the abscess being subsequently drained. This condition, of course, was easy to manage. I have been convinced for a long time that in many cases where the symptoms are unmistakably indicative of ulceration of the stomach, patients should have the benefit of diagnosis and treatment by an exploratory operation. It is comparatively easy to exsect the ulcerated area and stitch up the opening. In one of Dr. Howitt's cases, where the patient died from shock, there was no evidence of peritonitis. We cannot be sure that we will have an opportunity to operate after perforation has occurred. Death resulted in his case without any symptoms of inflammation whatever.

He spoke of bringing the intestines out of the abdomen in these cases. I agree with him that it may be necessary to do this in the class of cases that he speaks of, but as a rule it is not good practice in intestinal surgery to turn out the coils of intestine, because in a case where there has been no injury to the viscera, if the intestines are taken out and examined for half an hour or an hour, and then replaced, the patient will suffer considerable shock on account of this exposure. I have seen some patients almost die from the shock of a slow exploratory operation and considerable handling of the intestines. In gunshot wounds the intestines should very rarely be taken out. The surgeon should bring out a part of the intestine at a time, examine it, and replace it. I believe the practice of Dr. Robert T. Morris is good in some septic cases in which we have difficulty in cleaning out the abdominal cavity. The peroxide of hydrogen will help to remove the pus.

The after-treatment of cases in which there has been perforation depends entirely upon the case. If the inflammatory process becomes localized we can operate several days afterward with good results. But if a general inflammation threatens and we do not operate within twelve or twenty-four hours we cannot save the patient. In those cases where we have stricture of the pylorus from ulceration of the stomach which has recovered, which the doctor did not discuss, in the Heineke-Mikulicz operation we have one of the best operative procedures in abdominal surgery.

DR. EDWIN RICKETTS, of Cincinnati, Ohio.—A few words as to the diagnosis of gastric ulcer. In 1878 I saw a lady, aged forty-eight years, who had suffered from gastric ulcer for three years. Her hemorrhages from the stomach were severe. She was placed upon rectal alimentation in 1879, and under this treatment she gained sixty pounds in flesh. Subsequently she passed out of my hands for a time, committed some indiscretion in diet, and had a relapse. She then consulted Dr. Roberts Bartholow, who made a diagnosis of cancer of the pylorus. She returned to me again for treatment, but gradually went from bad to worse, and finally died. I made a postmortem examination, and it revealed a perforating ulcer the size of a lead-pencil, situated on the anterior surface near the pylorus. I have never seen a peritoneum in such a condition before or since. It was pinkish in color; there was great distention, and it was with a great deal of interest that this postmortem examination was made after such an eminent authority had disagreed with me in the diagnosis. Surgery should have a chance in such cases. It has not been my fortune to have had a similar case come under my observation from that time to this.

As to surgical intervention, as suggested by Dr. Howitt, I am quite sure he is on the right track.

A word as to shock. If a patient should die after such an exploration of the stomach as was made in the case reported by Dr. Howitt in which the stitches gave way, it seems to me that that patient should have died from shock.

I disagree with the last speaker in reference to shock from exposure of the intestines or having them on the outside of the abdomen for examination. I recently had a case in which every intestine was out, even the stomach, and carefully examined from one end to the other. They were not wrapped in hot cloths, but in 5 per cent. carbolated gauze. The examination was made satisfactorily, the intestines were returned to the abdominal cavity, and the wound closed. There was very little shock from this examination and exposure of the intestines. If we work rapidly in these cases the shock will not be as great as the last speaker supposes.

DR. FLOYD W. MCRAE, of Atlanta, Georgia (by invitation).—I have had no experience with operative procedures in gastric ulcers. The cases narrated by Dr. Howitt are exceedingly interesting, and the problems we have to deal with are very similar to those we are constantly dealing with in other abdominal operations. I wish to thank him for the suggestions which he has made with reference to operation for gastric ulcer before perforation has taken place, and I

desire to heartily indorse that part of his paper. It is one of the most important points in the paper. The work of such men as Mayo, of Rochester, Minn., and other surgeons, is sufficient to justify us in undertaking operations in these cases. It is true, as Dr. Douglas has stated, that a large number of these cases of gastric ulcer get well without operative intervention, but I believe more of them would get well without long, tedious illnesses if operations were done early. In any case in which the symptoms are unmistakably indicative of the existence of gastric ulcer, I believe we are justified in operating. Simply opening the abdomen and resecting the ulcerated area in the stomach, and stitching the wound, would not very greatly endanger the life of a patient if the operation is performed by a competent surgeon.

As to evisceration, it is a thing which I dread to do very much. My observations in the cases where this has been practised have led me to believe that there is danger of subsequent paresis of the bowel; at least the danger is very greatly increased by evisceration. There are cases where it is necessary to do this, but they are the extreme cases, where the pathologic conditions cannot be dealt with without evisceration. The intestines should be examined thoroughly in cases of gunshot wounds without taking them out of the abdominal cavity. For instance, only a small portion of intestine should be taken out at a time for the purpose of examining it carefully. I have done this repeatedly, and in this way have gone over the whole alimentary canal, having only a small portion of the intestine exposed at a time.

The point which Dr. Davis calls attention to, with reference to the use of peroxide of hydrogen, as advocated by Dr. Morris, of New York, is one that should receive attention. It strikes me as being an exceedingly dangerous procedure. Personally, I have never seen a case of general peritonitis, meaning by this, one which included the whole peritoneum. I have seen many cases of peritonitis where the inflammation was not limited by the adhesions, and in that sense it was a general peritonitis. I think modern surgeons accept that as a definition now of general peritonitis—an infectious condition which is not limited by adhesions. If that is true I know of no better way of distributing infection than by the use of peroxide of hydrogen after the manner advocated by Dr. Morris. It is true, the peroxide of hydrogen ferrets out the pus from crevices, but in doing this there is great danger of spreading infection. I should be much afraid to use peroxide of hydrogen in the abdominal cavity. Personally, I use only normal salt solution in this cavity.

DR. A. VANDER VEER, of Albany, N. Y.—Dr. Howitt's paper is certainly very instructive and of great value to us. I have listened

to the discussion with a good deal of benefit. I do not know that I can add much to what has been said.

A few years ago I published a paper on gastric ulcer, including a case of perforation that had come under my observation, in which the patient died within a few hours afterward. It was before we had been doing any operations for gastric ulcer. In that paper I spoke of a line of treatment, and gave the history of the use of nitrate of silver, which has been of great service. I followed those cases, and two of them ultimately resulted in carcinoma of the pyloric end of the stomach. I have operated on two cases of gastric ulcer, but these were not so acute as those referred to by Dr. Howitt, but for some reason or other I have not met with a case since of such an acute character as the one referred to in his series of cases. The cases I have operated upon have had unmistakable evidences of perforation. In one case I found adhesions which limited the amount of contents of the stomach from escaping into the peritoneal cavity. The operation was comparatively easy, aside from loosening up the adhesions.

I am satisfied from the number of cases I have operated upon and in which I have resorted to gastrointestinal anastomosis that we have to deal with the cicatrices resulting from gastric ulcers in quite a number of cases. They produce hour-glass contractions. They are the cause of stenosis at times of the pyloric end of the stomach. I believe we get cases of simple ulcer which result simply in contraction without the element of malignancy being present.

I am always willing to join a physician in regard to doing an operation when I believe we have a case of gastric ulcer present. I am a very ardent believer in operative measures, and I operate now in many cases of prolonged stomach troubles, called dyspepsia, etc., in which the patients continue to suffer and do not get well. I have made exploratory operations in a number of these cases, and have done gastrointestinal anastomosis with most marked benefit.

I would call your attention to one point which I think is of value in connection with exploring the stomach. When you believe you have a gastric ulcer which has not yet perforated, if you will lift the stomach out through the incision and use a transmitted light you can locate an old scar, and I believe you can likewise locate a recent ulcer in the same way. The transmitted light will locate a dark spot, and there you will find the ulcer. I am sure I have found this of benefit in locating old cicatrices.

Dr. Howitt, in reporting his third or last case, said that the man could eat everything afterward, yet he had some severe attacks of colic. When I did my first operations of gastrointestinal anastomosis,

with the use of the Murphy button—a mechanical contrivance I think a great deal of in certain cases—I found that by making an earnest effort to get the lower end of the duodenum, or, which I do now, taking the upper portion of the jejunum, and attaching it to the anterior or posterior wall of the stomach, that these cases would suffer from attacks of colic later on; that they would have attacks, at times, of vomiting bilious material, and they suffered more than I thought they ought to suffer after such an operation. Before Dr. Weir published his article, and as our records will show, Dr. Macdonald and myself talked over this subject, and in doing my first operation afterward I lifted up the upper end of the jejunum that I was going to attach to the stomach, and preferably the posterior wall of the stomach, in all cases, if possible, taking this portion of the jejunum that we lift up to attach to the stomach, making in it an opening which we think is of the proper size, then passing a Murphy button down through the incision toward the duodenum, another down about twelve inches in the jejunum, inserting the Murphy button so that we get a continuous passage between the duodenum and the jejunum. We then take the upper portion of the jejunum and attach it to the posterior wall of the stomach with the Murphy button or not, just as we used to do in our earlier days in making the over-and-over suture, bringing together the peritoneum afterward. By adopting this method I have had excellent results. The Murphy button will give a continuous intestinal tract. The opening in the stomach gives you an exit from the stomach at this point, and I have seen patients go on without any return of colic afterward. Their condition has been much better.

The point in regard to the examination of the contents of the cavity of the abdomen has been touched upon. When I am called upon to operate on a case in which there is great distention of the intestines—and it seems that I can scarcely manipulate them because of the gas that is present or the fluid contents—I much prefer to make a small incision in some portion of the intestine and let the contents out. When I roll out from the abdominal cavity a coil or two of intestines it gives the patient immense shock. This little opening does no harm if you are careful that no infection results.

Only a week ago I operated on one of those rare cases of volvulus of the cecum. The cecum had turned upon itself; it was discolored, ready to pass into a condition of gangrene, and contained fully a quart of liquid material, which I could not get rid of in any other way except by letting it out. The incision was closed, and the patient was doing well yesterday when I left Albany for this meeting.

As to the Morris method of using peroxide of hydrogen, I believe it

is a dangerous procedure, in that it carries infection to portions of the peritoneal cavity which would escape if we simply washed out the cavity with normal salt solution. I am afraid to use peroxide of hydrogen in these cases.

Dr. D. Tod Gilliam, of Columbus, Ohio.—I wish to say a few words on this paper. It has been a very instructive and entertaining one to me, and I desire to thank Dr. Howitt for it. I remember hearing a paper at the meeting of the American Medical Association by a surgeon from Cleveland (Dr. Warner) who had had some experience in operating on cases of gastric ulcer. His paper was a very interesting one. He claimed that in every instance non-perforative ulcer of the stomach could be made out by external evidences on the peritoneal surface of the organ. When the time comes that we can make anything like a definite diagnosis in cases of gastric ulcer, we should proceed at once to operation or at least to exploration.

There is only one other point I wish to speak of, and that is with reference to the use of peroxide of hydrogen in the abdominal cavity. I have used this preparation in different operations, but I have never employed it in the peritoneal cavity after the manner described. I have used it in localized disturbances there. I recall one instance in which, after its persistent use, it was followed by retardation of the healing process. Its interference with healing has caused me largely to discontinue its use. While it may ferret out pus and drive germs before it from the peritoneal cavity, I have not used it since because of its retarding the healing of wounds. Another thing: we may have such a thing as too much germ-killing for the benefit of the patient. We have pathogenic germs, and we have others that are physiologic, in that they assist in the natural processes of the economy, and we have germs that are antagonistic to the pathogenic germs. The antagonistic germs will assist when there are not too many of the others. I remember one instance in which, it seems to me, I could not have taken any more precaution to prevent microbic infection. The patient was a woman of prominence, in whom I took much interest. At the conclusion of the hysterectomy which I did in her case there was nothing apparently bad about the case, and at the end of ten days, when I removed all of the silkworm-gut sutures, everything seemed as nice as could be. The parts were coaptated. I left the room, started for home, and within half an hour thereafter received a telephone message that the woman had coughed, and in so doing the abdominal contents had been extruded. In carefully examining the wound I found that there was not a particle of evidence of healing having taken place. I deluged the parts with hydrogen peroxide and

sewed it up again with catgut, layer by layer, but with the absorption of the catgut the wound reopened and the patient died. I believe there is such a thing as too much asepsis sometimes, and that in carrying it out we retard the healing process.

I saw recently where, in the Arctic regions, under certain meteorologic conditions, accompanied by perfect absence of bacteria or germs, the healing process would not go on at all, because there is nothing to stimulate healing. One may have a sore on the hand, but it will not fester. It will remain in a raw state without any evidence of healing until atmospheric change takes place favorable to germ life. If the infection is not too great it will heal. If there is too much infection it will go on to suppuration, and later healing will occur. In the use of antiseptics we may go too far.

Dr. Howitt (closing the discussion).—So many points have been brought out in the discussion that I fear it will be impossible for me to reply to all of them, at least in a consecutive manner.

I regret that no one has referred to the suggestion I made with reference to the advisability of injecting a nutritive into the upper bowel and a cathartic into the colon during the operation in desperate cases, for in these at times I believe the measure will turn the balance in favor of the recovery of our patient.

It is far from my desire to be put on record as an advocate for operative measures in all cases of gastric ulcer before perforation, but I would certainly not hesitate to advise it to a patient whose life has been made miserable for a long period by the disease, especially if he has frequent attacks of gastralgia, and more or less interference with the caliber of the pyloric orifice. In such and other grave conditions due to the trouble I cannot comprehend any valid objection to at least making an exploratory incision, and, if possible, relieving the condition.

Although I did not read the paragraph, reference is made in my paper to the burning character of the pain as being a common symptom of the disease. Two of my patients in describing their symptoms emphasized this particular symptom, and one described it as feeling like " a bar of hot iron burning the internal parts."

In perforation of the stomach we always have, as Dr. Ross has stated, an extremely rigid abdominal wall. This is certainly an important symptom when it occurs in the course of the disease. The same cannot be said in regard to the pulse and temperature during the first hour or two. For a time they may be very deceptive, indeed, and if we rely on them at this period as giving a correct indication of the condition of the patient, the opportune time for action may pass

before we recognize the true state of affairs. Probably in no other surgical trouble pertaining to the abdomen is prompt action of greater importance. We must act quickly or never.

Some of the speakers have referred to the danger of shock following evisceration. It has been my custom to resort to it frequently, and I cannot recall at the present time a single instance of shock following as a result of it. My method may be different from that of others. Whenever it is in my opinion advisable I do it quickly, and at once cover the parts with sterilized gauze, which is kept at the proper temperature by irrigation with warm water. I have noticed that when a coil of bowel is exposed to the atmosphere for a few minutes its color changes to a darkish hue, but this quickly passes away when heat and moisture are applied. On more than one occasion in my work the intestines have remained outside the abdomen for more than an hour without any ill effects. There is certainly less danger in evisceration in many instances than in the unavoidable friction from frequent handling necessary to accomplish the end in view, beside, through it the time required to do the work is invariably shortened, which is a point worthy of consideration. Since the adoption of evisceration and enterotomy in bowel surgery my results have been far better than they were before that time. Permit me to make the assertion that when the exposed bowels are kept warm and moist there is no danger whatever in adding to the shock by resorting to this method. Beside, by it we are able to detect within the abdomen, especially where we have pus or septic matter, many great surprises, such as pus pockets so placed as to be beyond the reach of irrigation or any other method.

I have had no experience with the use of peroxide of hydrogen in rendering aseptic the infected abdominal cavity.

Dr. Davis spoke of the Heineke-Mikulicz operation as being of value in the treatment of perforated gastric ulcer—that is, making the incision transversely to the constricted part and stitching it up longitudinally. When we operate for perforation near the pyloric opening with the part thickened, bound by adhesions and too dense to yield, we must adopt quickly that which can be done with safety and not that which appears more ideal.

I am very thankful to Dr. Vander Veer for the practical remarks he has made; they have been very instructive and interesting to me.

With reference to vomiting following the use of the Murphy button, I have not had any trouble in gastroenterostomy, and it is my opinion this is owing to the proximal arm of the bowel being stitched to the stomach a little above and to the right of the button.

SOME POINTS REGARDING SURGERY OF THE GALL-BLADDER.

By A. VANDER VEER, M.D.,
ALBANY.

In all the rapid advance made in abdominal surgery there is scarcely any one portion that has received such careful and successful attention as hepatic and biliary complications. So thorough has been the work of our own Fellows and other American surgeons that it becomes a difficult task to add much, if anything, to the subject; yet there are some considerations of the question I wish to present. I trust I may be pardoned if I seem to go over and rehearse knowledge already acquired; for it must be borne in mind that this part of our surgical work has developed during my professional career, and wonderfully so in the past few years. While I have contributed but few papers, yet I have been a close observer and have done a fair amount of operative work in this field of surgery. I have met some disappointments, as I have had one case in which there was a recurrence of the pain, due to a gallstone lodged in the common duct, which must have escaped my observation at the time, although I made a careful examination of the entire tract.

I have had two cases of hour-glass contraction of the gall-bladder, with suppuration of the cyst, which gave me some trouble later in finding other gallstones deeper down. Although the patients did not suffer recurrence of pain, etc., yet each had a sinus for a long time afterward.

The thought first suggested is the early diagnosis of these troubles by the general practitioner and ourselves, the careful study of the views now advanced regarding the formation of gallstones, and the subject of diet and medical treatment. It is a comfort to see the great reliance once placed upon jaundice as one of the positive

symptoms swept away. No longer do we have to argue upon this point. The family physician has his anatomy much better in hand, and the literature of the subject is in every well-supplied library. It is true that in some districts or neighborhoods there is yet a field for instructive work.

Mrs. F., aged forty-two years, had suffered at different times for several years with symptoms that had resulted in her case being called gastralgia, acute dyspepsia, acute intestinal indigestion, nervous spasms, renal colic, and many other conditions; and at last, when malignant disease was suggested, in which the patient, from her long sufferings, was inclined to agree, the husband became much alarmed, and a change was made all around.

Dr. C., a comparatively young man, shrewd in his observations, in listening to all that had been said at the consultations of previous physicians, remarked: "I believe the case is one of stones in the gall-bladder," but was answered immediately: "Doctor, that cannot be, for no gallstones have ever been found in her stools and she has never been jaundiced." The result of it all was consent to an exploratory incision by the doctor and myself, and the removal of over eighteen hundred gallstones of various sizes. This patient has done fairly well, although she has had occasional attacks since, undoubtedly due to a stone lodged in the common duct.

Whether we believe that the formation of gallstones is largely due to sedentary habits, excessive eating, sex, nerve strain, pathogenic bacteria, or other conditions, I believe that diet, saline and bath treatment, medicines such as phosphate of soda, olive oil, succinate of iron, and other remedial agencies should not be ignored.

Recent investigations, in which emphasis is laid upon the absence of bile acids causing the cholesterin to precipitate, disclose, I believe, a field for future study and throw light on this intricate subject. No one will deny that great care should be exercised in watching the stools of cases under medical treatment. A single non-faceted stone with the stool is generally the end of that patient's sufferings.

Mr. A. had suffered for over three months with quite severe jaundice and at times marked biliary colic. I was called to see him with a view to operating, but after a few large doses of olive

oil he passed a single non-faceted gallstone, and has been absolutely well ever since.

On the other hand, when a faceted stone is passed and the patient still suffers, how earnest we should be in advising an early operation.

Another case quite different is that of Mrs. P., aged sixty years, who, under a similar line of treatment, passed three faceted gallstones and was advised to have an operation, but felt she could not submit to it. This patient suffered for several months longer, when there was marked cholemia with ecchymotic spots, and she died in a condition of exhaustion. Undoubtedly an operation should have been done for her relief, based upon the fact that all of the gallstones had not passed out from the gall-bladder.

We should not hesitate to place before the patient the dangers of perforation and its many complications, even though at the time they may escape death. Adhesions must be explained to the intelligent patient or friends, for how embarrassing they become to us when an operation is finally undertaken.

A few years since I saw Mrs. W., who had come many miles to my office—a clear case of gallstone, or stones in the common duct. Neither she nor her friends would consent to an operation. A medical line of treatment was tried, and she continued to suffer. Two years after—at the end of a severe attack—she took the train for Albany, reaching the house of a friend at 7 P.M. I saw her that evening. She was much exhausted and very willing to have anything done. At midnight she had a terrific pain, passed into a condition of shock, and died the next morning from perforation of the common duct, the contents escaping into the peritoneal cavity.

A prominent physician in a neighboring city, who had consulted me regarding his attacks of gallstone colic, believed he had cured himself by large doses of bicarbonate of soda. He stated that he had passed at different times nearly one hundred medium-sized calculi, but he was positively opposed to an operation. He was seized with another attack only a few days afterward and died within thirty-six hours from perforation. The autopsy showed within the peritoneal cavity and gall-bladder over three hundred additional calculi, some quite large.

When the case is evidently one of lodgement in the common

duct, even with intermittent jaundice, medical treatment must be continued for but a short time.

Cases of severe obstruction resulting in acute jaundice, and in which cholemia and ecchymotic spots appear somewhat rapidly, will not admit of great delay in surgical intervention. My most unfortunate cases have been of that kind in which this broken-up condition of the blood presented. They do not tolerate an operation well.

Another danger we should explain fully to our patients is the liability to cancer resulting from this constant irritation.

Mrs. L., aged fifty-eight years, mother of six children. I had attended her at the age of thirty-five, and during the following ten years, for several attacks of gallstone colic, the patient being more or less jaundiced each time. At times she seemed to pass the calculi and would improve, but her sufferings continued for a period of nearly twenty years, when she passed out from under my observation.

On March 16, 1898, I was called to see her, when she was suffering greatly from biliary colic, intensely jaundiced, some ecchymotic spots, much emaciation, and anxious for an operation. This I performed at my private hospital on March 19, 1898, and found a number of gallstones in the gall-bladder and common duct, with many nodules of cancer on the under surface of the liver. I completed the ordinary operation of cholecystotomy, with the gall-bladder attached to the incision, and she did well for thirty-six hours, then the most terrific hemorrhage occurred that I have ever seen in all my liver surgery, from which she died March 23d.

Who can deny but that if this patient had had relief from the gallstones in her earlier life she might have escaped cancer of the liver?

We must not hesitate to impress upon our patients what we now know to be a fact, that the continuous irritation of gallstones will result in cancer in a certain number of cases. Few intelligent women of the present day when told that they have a lacerated cervix fail to realize the possible danger that is ahead of epithelioma. They are parallel conditions. In these long-delayed cases great stress must be laid upon the danger of hematemesis and of hemorrhage from the wound. If an early operation is done, and the case is one of primary cancer, we have now the comfort of knowing that if the growth is small it can be successfully removed.

While on this subject of cancer we may occasionally err in believing the case to be one of carcinoma of the liver, when in reality it is not, but presents on exploration a gallstone or gallstones. I shall ever remember an error in diagnosis, made by myself, in the case of Mr. L., aged seventy-two years, who I supposed was suffering from cancer of the pylorus, or possibly of the duodenum, in connection with the opening in the common duct, as he occasionally suffered fom attacks of pain and vomiting, was slightly jaundiced, and altogether, with loss of appetite, emaciation, etc., I considered the case one of malignancy. However, he did not develop dilatation of the stomach ; he continued to live, and at the end of two years I was forced to believe that I had made an error in my first opinion of his case. Death occurred from gradual exhaustion, and a postmortem revealed a gall-bladder filled with large calculi, with many adhesions, but no malignant trouble. Therefore, I must say most emphatically that in all cases of suspected gallstone trouble that do not yield to an earnest course of treatment, an exploratory incision becomes absolutely necessary. It is safe and will enable us to make a correct diagnosis. In gall-bladder troubles particularly will we be able to grant our patients relief and recovery.

Mrs. G., aged sixty-five years, who was very ill in bed for three months, having the attention of a number of physicians, finally recovered when her gallstone found its exit per rectum.

I am satisfied, from my own observation, that the number of cases of intestinal obstruction due to biliary calculi finding their way into the intestinal tract, and either by additional concretions or from the peculiar lodgement causing obstruction, is growing less.

A very marked case came under my observation a few years since, in which Mr. B. passed through an illness that at one time was thought to be typhoid fever. He finally recovered and died of advanced age, and I had an opportunity of making an autopsy. Remembering his past illness, I was markedly impressed by finding a fistulous track existing between the gall-bladder and the upper portion of the ascending colon. As has been observed by careful operators, these fistulous openings that permit the bile to escape into the large intestine do not seem to seriously interfere with the patient's condition of digestion or cause constipation.

There is a point in connection with some such cases that I wish

to refer to—*i. e.*, where we have the irritation of the gallstones producing inflammation of the gall-bladder, resulting in suppuration and an abscess. In these cases not infrequently adhesions of the gall-bladder to the under surface of the abdominal wall occur, and we consider ourselves quite fortunate, as we attack them, in finding that we can open directly into the gall-bladder, remove the gallstones, and drain. I have had two cases, however, in which I was greatly annoyed in finding gallstones later on that had escaped careful and thorough examination at the time, making a prolonged recovery for the patient—in fact, one lasting for a period of nearly three years. The gallstone was so large and so hard that it was impossible to dislodge it by any form of instrument. I broke a very firm and solid pair of forceps in taking hold of it at one sitting, and had some little trouble in removing the fragments of the instrument.

We must recognize hour-glass contractions of the gall-bladder as a factor in causing the lodgement and retention of one or more gallstones; therefore, in operating upon abscesses of the gall-bladder we should be very careful about noticing the faceted condition of the gallstone, and, if present, not be content to simply remove one large stone, for there are apt to be others.

In these cases of gall-bladder suppuration one does not always feel like loosening up the adhesions and doing a cholecystectomy, but is content to drain, leaving the patient, as in other of our operations, with a fistulous track which ultimately becomes a mucous sinus, although it may be quite distressing if it continues for a long time. These are the cases in which we are justified later in making a more thorough operation, incising outside the point of adhesions, and doing a cholecystenterostomy, removing at the same time what may be left of the gallstones in the gall-bladder, and most or all of the gall-bladder, either by means of the Murphy button or otherwise.

In these cases of retained gallstones or stones within a suppurating bladder, with complications, Mayo Robson has spoken very favorably of an injection of a 5 per cent. solution of green soap.

At the present time it is a great comfort to the operating surgeon to know how kindly the patient will, in most cases, submit to a mucous or biliary fistula. They are so much more comfortable

than they were before the operation that they seldom complain much, but there are cases in which it becomes necessary to close the mucous fistula. I have succeeded well in such cases where there are no complications in connection with the gall-bladder such as I have referred to, but a simple fistulous track left, by dissecting out this fistulous sinus, making a fairly long tube of it, then, by means of the small Murphy button, connecting it either with the upper portion of the jejunum or the lower portion of the duodenum, a most happy result following.

I have observed with great satisfaction the complacency with which the public, or, to speak more correctly, the patient and friends of the patient, will submit to an operation where the attacks of pain have brought great suffering, and we have had reason to believe that gallstones were present, yet found only a stenosis of the common or cystic duct. When drainage was established the relief afforded seemed to disarm the patient from making any severe criticism in regard to a possible error in diagnosis because the gallstones were not found.

These patients very often make a good recovery without any additional operation, the fistula closing within a few months or a year, or even longer, after the operation has been performed, and when the inflammatory condition, or whatever may have caused the stenosis, has been relieved. I can cite several cases that have healed without any further operative intervention, where we expected to find one or more gallstones, but did not.

We should lay great stress, when seeing a patient suffering from biliary colic, upon warning the individual not to allow too many attacks to pass by. The complication of inflammation of the ducts with adhesions, stenosis, etc., should be carefully explained.

Perhaps one of the most difficult features the surgeon operating upon the gall-bladder or gall ducts at the present time has to deal with is the removal of a stone from the common duct, the difficulty of reaching it and the embarrassment of sometimes closing the incision in the duct being great. All of us are familiar with the methods of reaching it directly by incision by passing into the duodenum, then entering the common duct, reaching the stone sometimes in that way; and yet, when we come to close the incision in the common duct by suture, Halsted's hammer, or otherwise, we are often greatly embarrassed, much valuable time being

lost, particularly when the patient is much emaciated and exhausted and it is not desirable to prolong surgical intervention.

If we will look into our anatomy a little carefully we will find, as is so well described by Mayo Robson, what is called the peritoneal pouch, on the right side of the abdomen, and of which he speaks as follows :

"The large peritoneal pouch . . . bounded above by the right lobe of the liver, below by the ascending layer of the transverse mesocolon covering the duodenum internally, externally by the peritoneum lining the parietes down to the crest of the ilium, posteriorly by the ascending mesocolon covering the kidney, and internally by the peritoneum covering the spine, has long been recognized, but perhaps not sufficiently appreciated, in gall-bladder surgery."

Mr. Rutherford Morrison drew attention to it in a paper in the *British Medical Journal* for March 3, 1894 :

"It is possible to drain this pouch satisfactorily by means of a long glass tube, but it is probably safer on the whole to make use of a lumbar drain. The author preferred to place such reliance on the ease and safety with which it can be drained that he does not advocate much time being spent in suturing incisions in the gall-bladder or bile ducts. It is interesting to note that it is capable of holding nearly a pint of fluid before it overflows into the general peritoneal cavity through the foramen of Winslow or over the pelvic brim."

An impressive case regarding stones in the hepatic duct came under my observation a few years ago. Dr. S. was ill for several months with evidence of biliary trouble, and the obstruction was thought to be due to adhesions following an attack of typhoid fever from which he had suffered several years previously. He died in a most profound condition of cholemia and exhaustion. The autopsy revealed several stones in the hepatic ducts, which perhaps could have been reached and the incision drained through the peritoneal pouch.

Most of us are familiar with abscesses we have opened through the lumbar region, and in which we have had the positive evidence, in finding gallstones, of the case having been connected with the gall-bladder, yet the larger peritoneal cavity has been shut off and the patient escaped general peritonitis.

No doubt many of us can refer to so-called retroperitoneal abscesses, perinephritic abscesses, abscesses resulting from appendicitis, as we believed ; but when attacking the same through the lumbar region, as it was desirable to work from behind, we have not only found pus, as we expected, but have also found not one but several large gallstones.

January 21, 1900, I was called to see Mrs. L., aged forty-five years, mother of several children, who had had many attacks of gallstone colic, but had remained entirely free from them during the past three years. January 19, 1900, she was taken with severe pain pretty well down in the inguinal region, on the right side, requiring several doses of morphine to afford relief. This was followed by vomiting and great tenderness over the abdomen. Her physician, a very intelligent man, was of the impression that she was suffering from appendicitis, and when I saw her on the afternoon of the following day I was fully convinced that he was right in his diagnosis. As the case presented so many severe symptoms, her temperature being 103°, and as she had had one or two marked chills, I felt that an operation was absolutely necessary. I advised her being taken to the Albany Hospital, which was done the next morning. On second examination the tenderness seemed to be more particularly in the right lumbar region, and there a phlegmon could be located. I felt quite sure that the case was one of appendicitis in which we had to deal with an appendix extraperitoneal, outside, and behind the cecum ; therefore, I planned my incision as if I were endeavoring to reach the kidney. By careful dissection, and with the use of the needle of the aspirator, I very readily reached a pocket of pus. This I opened up freely, and could pass my finger upward toward the gall-bladder and downward toward the appendix ; but, being unable to find any necrosed portion of the latter, I concluded it would be better to wash out and introduce a drainage-tube. The patient was relieved at once, had a good night, her temperature and pulse became normal, and, with the aid of rectal enemata, several good movements of the bowels were procured. Two days afterward, in making my rounds with the house surgeon, I noticed, as the nurse removed the dressings, a marked appearance of bile, and I said to the doctor, " What do you think that looks like?" He very quietly replied " that it had something of the appearance of a discharge

from the gall-bladder." The patient did nicely for two weeks, when, in washing out the cavity, a couple of gallstones were floated to the surface and saved. After this the wound healed without any delay.

Undoubtedly these gallstones had found their way out of the gall-bladder in her attack of three years previous, and must have become lodged in the peritoneal pouch, shut off from the abdomino-peritoneal cavity; then, either from irritation of the appendix or other cause, suppuration occurred, the abscess which we opened not being strictly in connection with the appendicitis believed to be present.

I call to mind another case in which a famous surgeon in our State had made the diagnosis of perinephritic abscess, and in doing the operation for its relief was quite astonished, as were the family physician and those present, when he opened into the abscess cavity through the lumbar region, to have a number of gall-stones roll out with the pus, indicating that the trouble had been associated with the gall-bladder instead of the connective tissue of the kidney. This patient made a good recovery by simple drainage.

Now, if we will take a little more advantage of this anatomical relation of the parts, we can often shorten an operation in which we have found it quite difficult to close the incision in the common duct; for we will find a very easy method of drainage by means of the lumbar stab.

The peritoneal cavity is shut off quickly, and we all know that the tendency is for these wounds in the bile ducts to heal kindly. The record of the few operations done is decidedly in favor of this method of drainage.

This is a point to which I wish to call your attention. It is also particularly true in stenosis of the common duct, malignant or otherwise, and where there is a small, contracted gall-bladder, so exceedingly embarrassing to handle. We cannot bring it up into the incision, we cannot do a cholecystotomy or cholecystenterostomy, but drainage seems to be absolutely necessary and can be done by this method.

How to close a persistent mucous or biliary fistula following a cholecystotomy is a question that will rest largely with each individual operator. I am quite confident that we succeed better if

in doing the first operation we unite the peritoneal surfaces of the gall-bladder with the peritoneum and deep fascia of the incision, instead of bringing it up and uniting it with the skin; that afterward, when all obstruction has been relieved, these wounds, then freshened, will close quickly and permanently; whereas, if you have brought the gall-bladder up and attached it to the entire incision and the skin, the sinus becomes more rugged, thickened, and cartilaginous, and the tissue will not unite with sufficient firmness to bear up with any resistance from within.

A few more points. I believe the exclusion of starchy foods and sweets to be of importance in these cases. We do sometimes see beneficial results in severe cases of gallstone trouble where an energetic course of treatment has been followed out at Carlsbad or some similar watering-place.

A point in regard to massage. This always seems to me an exceedingly dangerous line of treatment, particularly in connection with a full gall-bladder or a gallstone lodged in the common duct. The same censure holds good in regard to aspiration of the gall-bladder—something that should seldom, if ever, be countenanced. It is true that healthy bile in the peritoneal cavity is not particularly dangerous, but when you get a distended gall-bladder you are pretty apt to have in it septic micro-organisms of some kind.

Regarding the use of the X-rays in the diagnosis of gallstones, it has brought me but little aid. I am frank to say that I have seen scarcely any good result from its use.

Finally:

1. An early diagnosis of cases.

2. In suppuration of the gall-bladder with adhesions, a most thorough examination should be made from within, by digital exploration and use of probe, for any possible deep-seated calculi.

3. In prolonged operations upon the common duct or hepatic ducts, where adhesions are present and it is difficult to close the incision after removal of the calculus, drainage through the peritoneal pouch by means of the lumbar stab is advisable.

4. When the patient is suffering seriously from cholemia, with marked ecchymotic spots over the body, intense itching, the blood examined and found in a septic condition, an operation is not to be encouraged. It is too late, in the vast majority of cases, for the patient to recover.

5. General practitioners, as well as the surgeon, should place more earnestly before the patient and friends the dangers of repeated attacks of gallstone irritation resulting in cancer of the ducts, stomach, or liver.

DISCUSSION.

Dr. Edwin Ricketts, of Cincinnati, Ohio.—Mr. President: The very interesting paper presented by Dr. Vander Veer is worthy of the profoundest consideration. Shortly after my pupilage with Mr. Tait, and soon after my return to Cincinnati from England, I was called to see a prominent physician. I examined him carefully, and in spite of some experience I had had in gall-bladder surgery, I made a diagnosis of cancer of the liver. That was in 1888. The disease progressed, and the patient died. A postmortem examination was made, and half a dozen gallstones as large as the largest one that has been presented this evening were removed. If I am considered enthusiastic in the removal of gallstones that case is responsible for it. It taught me a lesson, a very sad lesson, I can assure you.

As to the use of the Murphy button, some theoretical objections to its use have been advanced, one of which is that on account of the opening of the gall-bladder into the intestine the gall-bladder becomes infected. I must say that my experience with the anastomosis button devised by Murphy is not in keeping with this theoretical objection on the part of some operators.

As to cholecystotomy, I consider it the best operation in the majority of cases, for the reason that the operation is well in hand. We do not close the wound immediately, and the result is that you establish better drainage. Sometimes when we think we have removed all of the stones, calculi from some source are washed into the field of operation, and are easily removed.

There is one point to which I desire to call the attention of Dr. Vander Veer, and that is the experimental work on the bile ducts, as practised by one of our Fellows, Dr. Davis, some nine years ago. I do not think he has given Dr. Davis due credit in that respect.

As to the pouch the essayist speaks of, I have never made use of drainage through this region, but it seems eminently feasible. Experimentation on healthy bile ducts is one thing; surgical intervention in cases of diseased gall-bladders and bile ducts is quite a different thing. We can cut down on the common duct of a dog, pack gauze around it, and the result is we will have healing of the wound and

closure of the common duct. This is not so when we have a diseased condition brought about by gallstones, for the reason that the gall-bladder walls are infected, and the healing process is not an easy one by any means. It is here that drainage through the rectal pouch is going to offer us great advantages in the healing of certain cases.

As to massage, I would just as leave think of massaging the urinary bladder for the removal of urinary calculi as I would think of resorting to massage of the gall-bladder for the removal of stones in that viscus. Gallstones are dangerous, it makes no difference where they are situated. They are foreign bodies. When we consider how much fluid is secreted by the liver every twenty-four hours, we will appreciate the absolute importance of keeping the outgoing channel clear of any débris. I have seen cases in which a diagnosis of cancer of the stomach was made; I have seen cases in which a diagnosis of almost every disease that takes place within the abdominal cavity was made, and these cases resolved themselves into gallstones. The last patient I operated upon was a woman from whom more than fifty calculi were removed. I saw her a few days ago, and she is in good health, after having suffered for more than two years and having lost over sixty pounds of flesh. She has regained her usual weight.

Dr. D. Tod Gilliam, of Columbus, Ohio.—I have had three or four cases of gallstones in the last few weeks that are somewhat interesting, and they are pertinent to some features of the paper presented by Dr. Vander Veer.

With reference to mistaken diagnosis, I wish to say that it not infrequently happens that a diagnosis of cancer of the gall-bladder, of the liver, or of the stomach is made in cases of gallstones. The first case I ever saw in which a mistaken diagnosis was made was a very interesting one. It occurred about thirty years ago, shortly after I graduated, and before surgeons were doing any of this gall-bladder surgery. I was called to witness a postmortem examination on a case that had been diagnosticated as cancer of the pyloric orifice of the stomach, and in which the patient gave almost every evidence of that disease, in that she would retain food sometimes for two or three days at a time or longer, then eject all of the contents of the stomach. She gradually declined, and had the peculiar hue which we find in cases of cancer, a lemon color, associated with emaciation. We cut down and found what was supposed to be cancer of the pyloric orifice. Upon closer investigation a large gallstone was found impacted in the common duct, pressing against the pyloric orifice so as to occlude the passage entirely. This case was a lesson to me in diagnosis.

A few weeks ago a patient was brought to me with a diagnosis of cancer of the stomach, in which there could be made out distinctly a nodule midway between the umbilicus and the epigastrium. It was slightly movable. It had been there for some weeks, ever since the patient had fallen under the observation of a physician, and she was gradually going down. I did not think there was cancer of the stomach, for the reason that upon inquiry I found she had an appetite, and on that ground alone I rejected the idea of cancer of this organ, but not entirely. I told her we might find something else, in all probability a gallstone. I cut down and removed a large gallstone. This case illustrates how the surgeon is sometimes deluded when the patient is under the influence of anesthesia. When the patient was placed on the operating-table, anesthetized, and the incision made, I found that the lump had disappeared. I entered the abdomen, searched around for it a long time, but could not find it. I searched all around under the liver and ran my fingers in other directions. Finally, I put the patient in the Trendelenburg position, and found this gallstone away down here (illustrating). I fished it up and removed it.

The next case I wish to relate as bearing upon this subject came under my observation within the last few weeks. I have here the specimens, two hundred and sixty-one gallstones. These, in connection with the fluid in the bladder, made a very large mass. The patient was an old woman, with atrophic walls, so that a diagnosis of cancer had been made. The case did not seem to me to be cancer, but something impelled me to cut down, and when I did so I found it was the gall-bladder filled with gallstones. I found that the gall-bladder was embraced by the surrounding tissues just as an acorn is held in its cup. I began to dissect out the gall-bladder, and found that the adhesions were becoming denser, and, finally, my finger went into the gall-bladder, making a large rent, so that it was necessary in this case to remove the gall-bladder along with the gallstones in order to prevent disastrous results. As I could not open the gall-bladder in that position, I removed it; but instead of tying off the duct I left a little funnel-shaped end of the gall-bladder at the extremity and stitched it to the peritoneum, put in a drainage-tube, and the patient in two or three days thereafter was in an almost moribund condition, so that I gave her up. I sent for her friends, but on examination I found that the drainage-tube had become occluded. I withdrew it, and in twenty-four hours there was a discharge of bile through the opening, the patient rallied, and is now ready to go home.

With reference to tying off the cystic duct, an experience came to

me second-hand that has taught me a lesson. A physician in Dayton, Ohio, operated on one of the Sisters of the Poor for what he supposed to be a case of appendicitis. There was quite a large mass in the region of the appendix, and, after cutting down, to his astonishment he found a large gallstone. He left the wound open, and after some hours, another gallstone was discharged. After several days a third gallstone of considerable size was discharged. He tied off the cystic duct, and the result of it is that the woman has a permanent mucous fistula which he has not been able to close. I have made several attempts to close it myself. Since then I have never tied the cystic duct, nor do I believe it is a good idea to do so. These cases if properly drained usually heal rapidly, and leave no fistula. In the case in which I removed the gall-bladder I left an open way for the discharge of the contents.

I consider the Trendelenburg position almost absolutely indispensable sometimes in these cases.

The other day an old woman was brought to me, after having been under the care of three physicians, and they did not know whether she had cancer or gallstones. I cut down, and the mass, which was distinctly found before the operation, had disappeared under anesthesia. I made a careful search for it in all directions, but without avail. I finally put the woman in the Trendelenburg position, and found a cancerous mass on the under surface of the liver in the vicinity of the gall-bladder. The gall duct was occluded in such a way as to considerably distend the gall-bladder. As the case was hopeless we did not take the increased chances of draining the gall-bladder. The wound was closed, and in three days she left the hospital. She is getting along nicely so far as the operation is concerned.

I have been in the habit for some time of using the reverse Trendelenburg position in operations on the gall-bladder, following the instructions laid down in a new book on surgery by Warren and Gould. These authors recommend the reverse Trendelenburg position, by which we hang the patient up by the shoulders. I have operated in this way on a number of cases of gallstones, but in the cases mentioned it was the Trendelenburg position that brought the parts into a position so that we could palpate and distinguish them easily.

Dr. James T. Jelks, of Hot Springs, Ark.—Some years ago the late Dr. Briggs, of Nashville, presented many cases of calculi of the bladder, and I said at that time that it seemed to me all the calculi in the world came from Tennessee. I went to Philadelphia a few years ago and had the pleasure of witnessing ten laparatomies in six days,

for ruptured tubal pregnancy, by Dr. Joseph Price, and I said it seemed that all tubal pregnancies were located in Philadelphia. I then had the pleasure of seeing the work of Dr. John B. Deaver for about ten days, during which time I saw him do fourteen operations for appendicitis, and I said it seemed to me that all cases of appendicitis circled around Dr. Deaver. I have never seen such a number of gallstones, large and small, in one year's collection in my life as has been presented by Dr. Vander Veer. It strikes me that Albany is full of gallstones. Seriously, Mr. President, I can congratulate Dr. Vander Veer on his splendid work.

Dr. Lewis S. McMurtry, of Louisville, Kentucky.—Dr. Vander Veer has given us a very extensive and interesting chapter on the surgery of the gall ducts. Like all of his papers, this one is thoroughly practical, and the subject is discussed with characteristic candor. In the remarks I shall make I shall allude to one or two points and request Dr. Vander Veer, in his closing remarks, to analyze from his large experience one or two features which I have encountered in my own work in this line. In the first place, he has called our attention to the value of the lumbar incision for draining both the peritoneal pocket and the gall-bladder. While this may be an exceedingly useful method of drainage, still transperitoneal drainage is so very satisfactory in this work that we are not driven necessarily to adopting the lumbar route if it is not convenient. All of this surgery originated in the conceptions of J. Marion Sims and the foundation laid by the late Mr. Tait. There is one conspicuous characteristic about it. Take the work of Mr. Tait: take all of the gall-bladder surgery from his early work until now, and there is no other department of abdominal surgery that yields such successful results. As Dr. Vander Veer has stated, it seems that bile is not intensely poisonous, and that this particular area of the peritoneum can be more readily drained than any other part of the peritoneal cavity. Take the operators in this room who have done gall-bladder surgery, and we will find, if they cite their experiences here, considering the gravity of the cases and the number of operations done, that the mortality is less than in any other department of abdominal surgery. Hence, I say, drainage here, even transperitoneally by gauze, shutting off the general peritoneal cavity and making a tract by adhesions around, is thoroughly practicable. It will succeed here where the same method of gauze packing for purulent collections in other portions of the peritoneal cavity will not succeed so well.

Dr. Vander Veer has called our attention to cases in which there is profound cholemia. When cholemia has gone on so long and is so

profound that degenerative changes have taken place in the kidney the operation is to be discouraged. I fully concur with the essayist in that statement, and we certainly do harm by resorting to major surgery upon hopeless cases. It deters others who might be benefited by legitimate surgery from accepting operations that can be advantageously and successfully performed. It is difficult here to establish the dividing line. I recall a case of my own that occurred during the past six months of a woman who had the largest gallstone that I have ever seen except one, and that was found postmortem. It was impacted in the cystic duct. For nine weeks the woman had had a continuous attack of biliary colic, so that she was taking hypodermatically from six to ten grains of morphine a day. She was practically insane. Her tongue was intensely coated; her complexion was of a lead-sallow hue. She was in a wretched condition, and anyone, after making a general survey of her condition, would not have considered the case one for hopeful surgery; yet, after opening the cystic duct and removing this large gallstone and establishing drainage, she was nursed back to health, making a perfect recovery. This is one of the cases that would seem to be on the border line, and I have no doubt some surgeons would consider it reckless to operate in such cases; yet the rescue of one case of that kind will always remain in the experience of the individual operator—a landmark that will stimulate him to make the dividing line more narrow between the cases that are operable and those that are inoperable.

I have maintained for some time that in this particular part of the peritoneal envelope an exploratory incision is more justifiable than in any other part of the abdominal cavity under good conditions. By this I mean environment, a thoroughly good hospital, and with skilled attendants, an exploratory operation of the gall-bladder is fraught with less danger than any other abdominal exploration. We have another class of cases that I want to ask Dr. Vander Veer to speak of in closing the discussion, because he has certainly encountered them in his large experience in this work. These cases have embarrassed me very much, and I am not able to explain them. I recall a case which Dr. Mathews saw with me, of a gentleman in this State, aged forty-seven years, whom I first saw at his home in a typical attack of biliary colic. The symptoms were unmistakable. An operation was proposed; he got over the attack and declined it. He went off to Waukesha, and some months afterward was treated medically by various methods, but the attacks recurred. Finally, after enduring much suffering, he determined to have an operation performed. I operated, and was unable to find the gall-bladder. I made a thorough

exploration. I traced the liver all over its under surface and failed to find any gall-bladder.

DR. GILLIAM.—Did you put the patient in the Trendelenburg position?

DR. MCMURTRY.—No, sir. I made a thorough exploration of the under surface of the liver. There were numerous adhesions in that vicinity. I closed the wound, the patient made a prompt recovery, and is entirely well now. I want to ask Dr. Vander Veer to discuss that class of cases in which alterations have taken place, either as the result of inflammatory changes or from some other cause, perhaps malformations, where the biliary tracts have undergone alteration and where intelligent search will not disclose the gall-bladder. The patient made a perfect recovery as the result of the exploration and the separation of the adhesions, and now six months afterward is in perfect health.

Again, in other cases which I have encountered (and I allude to this class of cases because I do not want my hearers to confuse them with the cases I have just mentioned), where there has been a small stone in the gall-bladder for a long time, the gall-bladder will contract upon the stone until it is as small as the end of one's finger. In these cases you will be able to open the gall-bladder, remove the stone, and, by gauze packing, drain it transperitoneally. This class of cases is especially suitable for lumbar drainage.

DR. CHARLES GREENE CUMSTON, of Boston, Mass.—I would like to report two cases as having a bearing on the diagnosis, because I do not think it is an easy matter in many to make a correct diagnosis either of carcinoma of the liver or of gallstones.

The first case was that of a young girl, aged nineteen years. A year before I saw her she had a typical attack of gallstone colic. She was jaundiced. She had clay-colored stools, furred tongue, anorexia, and other symptoms, from which she recovered. One year later she had a second attack, and the family physician asked me to see her. I did so, and at the time found her in pain. She was very much jaundiced, had clay-colored stools, and over the region of the gall-bladder by palpation I could feel a tumor about the size of my fist, which came right up under the abdominal wall. It was globular, tense, and felt exactly like an enlarged gall-bladder, one that might be filled with pus, although fluctuation was not distinct. I had never felt a gall-bladder like it. Dr. Cheever saw the case in consultation with me, and concurred in my diagnosis. She was treated medically until the jaundice disappeared, which took about two weeks. No gallstones were found in the stools. I operated, made an incision

through the peritoneum, and found a mass directly under the peritoneum. I lifted up the peritoneum, carefully incised it, and found the gall-bladder adherent all around. I separated it a little bit, but found it nicely walled off from the general peritoneal cavity. An aspirating needle was inserted to the extent of 5 centimeters, but did not strike any gallstones. I passed the needle in several directions, and still could discover no gallstones. I broke down the adhesions, entered the general peritoneal cavity, and found that what we took to be the gall-bladder was a large carcinomatous mass growing from the under surface of the liver and dipping down into the pelvis.

In the second case I made a diagnosis of carcinoma of the liver in a man, aged forty years, who had always been well. His wife was likewise a healthy woman. She had borne four children, two of them having died in early infancy, and two were living and well. This man was jaundiced and had considerable pain over the region of the liver, which was hypertrophied. At the lower border of the liver a large nodule presented, about the size of a silver dollar, which could be quite easily palpated. The man had lost much flesh in the last six weeks. As I have previously remarked, I made a diagnosis of carcinoma of the liver. I exposed the surface of the liver, and found two large gummata. These I excised, and he is now perfectly well after a prolonged treatment with iodides.

Regarding the etiology of gallstones, I have been led to suppose that they were due to intestinal infection either from the bacterium coli commune or the typhoid bacillus when a patient has had typhoid fever. It has been proven by Fournier that bacilli are found in the center of gallstones, and cultivations of living bacilli have been made from these nuclei. This probably also explains the cause of some cholecystitis.

As to carcinoma of the gall-bladder and its relation to the existence of gallstones, it is becoming more apparent that gallstones are an important factor in the causation of carcinoma of the gall-bladder. On this account alone, when gallstones are present, operative intervention is indicated.

Dr. Edwin Walker, of Evansville, Ind.—Dr. Vander Veer in his paper pointed out the importance of the general practitioner being educated to make an early diagnosis in these cases. While that is very essential, I would couple with it the important point that the surgeon should make a correct diagnosis when he gets the case. I have recently had two cases sent to me upon which to operate for gallstones. One of them proved to be a gastroduodenitis, which was relieved by careful medical treatment. In that case I was enabled

to make a diagnosis because the patient was vomiting more than a patient should with gallstones.

The other case is rather amusing. The physician who brought the patient to me had had a controversy with the consulting physician regarding the case. He had made a diagnosis of gallstones, and told me that he had collected six gallstones from the evacuations of the bowel. After thoroughly examining the patient I found that he had appendicitis, but I let the physician down easy by giving him the gallstones to take home with him.

In regard to suturing the ducts, the position taken by the essayist is correct. I am sure that I lost one patient by taking time to suture the duct after removing a stone from the common duct. The patient was already in a bad condition, and the suturing prolonged the operation very much. Since that time I have drained with good success. In those cases where a stone has been removed from the common duct I have found a great deal of comfort in utilizing a suggestion made by Dr. Robert T. Morris, a Fellow of this Association, namely, making a gauze wick, surrounding it by rubber tissue, the advantage of that being that it drains well and does not adhere to the intestines. It does not give much trouble. In all cases of abdominal surgery requiring drainage the gauze wick of Morris is useful.

I was very much interested in Dr. Vander Veer's paper, and I fully concur with him in his treatment of the subject.

Dr. James F. W. Ross, of Toronto, Canada.—Since our last meeting I have had two cases of gallstones which may be of interest to some of the Fellows. Of course, the subject of gall-bladder surgery is pretty well settled, so far as the removal of stones from the gall-bladder is concerned. The surgery of the ducts, however, is to my mind not altogether settled as yet. I will relate those two cases briefly.

One of them occurred in a man supposed to have cirrhosis of the liver. I found below the edge of the liver a mass. In dealing with this mass I thought he had an enlarged gall-bladder, and was probably suffering from gallstones. The history of the case showed that he had been kicked by a horse some years previously, was laid up a considerable time, but recovered from that and regained his usual health. Shortly after this his health failed him, and he had the appearance of a man with cirrhosis of the liver. I found at the lower margin of the liver a chronic abscess, which contained a cheesy and calcareous deposit. The question now was what was best to do. I did not care to drain the abscess into the peritoneal cavity, and I did not feel warranted in stitching the gall-bladder to the outer surface. As there

happened to be in the gall-bladder two or three small stones, I thought the best thing to do was to open it, and through it I opened into the abscess cavity, squeezed out its contents, drained the cavity through the gall-bladder, and fastened the gall-bladder to the wound. Much to my surprise the man recovered. I do not know why he should have regained his health after this operation, because it seemed to me that the liver was so damaged as a consequence of the chronic inflammation that he was not likely to improve.

About a week before I left home a physician wrote me regarding a sister-in-law who had a peculiar mass in the right side of the abdomen. I told him to send her to my office and I would examine her carefully. She was an elderly woman, aged sixty years. I found a mass in the right side of the abdomen, and naturally I began to think of malignant disease. She had had attacks which simulated the existence of gall-stones. In exploring the abdomen I found what I thought was a malignant nodule in the under surface of the liver. I peeled away the omentum and folds, and found the colon closely adherent to the under surface of the gall-bladder. There were dense adhesions. Continuing my incision over the mass I removed a single gallstone. I passed a probe down to see if there was any communication still remaining between the gall-bladder and the colon, and found there was none. This case was one of suppuration of the gall-bladder, with perforation into the colon, with discharge of gallstones through the colon, and one gallstone was left behind. The woman has had no cachexia, and will regain her health. In some cases it is impossible to make a positive diagnosis before we open the abdomen, as illustrated by this case.

Since our last meeting I have had another case which I will relate briefly. When the patient, a woman, was brought to me I felt satisfied from her cachectic appearance, from the jaundice present, and the enlarged condition of the gall-bladder that she was suffering from malignant disease. If we find an enlarged gall-bladder and jaundice present the chances are that the patient is suffering from malignant disease. In cases of stone in the common duct, in which jaundice is evident, the gall-bladder is likely to be small. At the time the case was referred to me I was going out of town, and one of my former pupils operated on her, removing ten or twelve gallstones. I advised against operation unless it was simply an exploratory one. The jaundice did not improve, so a second operation was done, when cancerous disease was found, and the woman died shortly after. This case illustrates that even after the abdomen is opened it is difficult for either a novice or an experienced operator to make an accurate diagnosis.

Enlarged gall-bladder and jaundice mean malignant disease. A contracted gall-bladder with jaundice means a stone in the common duct. The reason for this is that the gall-bladder, after the common duct has been obstructed by a stone, endeavors to force the bile through. In this way the condition simulates that of the urinary bladder in the presence of a stricture. The gall-bladder gradually becomes thickened and contracted and not dilated. A stone in the common duct frequently becomes honeycombed and breaks down in time. Stones vary, however; some undergo this disintegration and others do not.

Many of the stones removed are found to be honeycombed and soft. A certain amount of bile, every now and then, trickles past them; mucus may be obstructed in its onward flow, and the meshes of the stone are thus closed. As a consequence of the jaundice, accompanying the obstruction of the common duct by stone is often wavering, more intense at times than at other times. While speaking of the removal of the stone from the common duct, I may say that I have four patients walking about who have a new channel established between the gall-bladder and the colon, and who have the common duct left in the condition it was in before operation—namely, obstructed by stone. These patients have suffered no inconvenience from this condition; they have been entirely relieved of a chronic jaundice from which they suffered, and the former paroxysmal pains, due to the presence of the gallstone, have entirely disappeared. I believe that, as a consequence of the divergence of the bile stream and the absence of bile from about the stone in the common duct, disintegration has taken place, and perhaps the lumen of the duct has been entirely restored.

The cholecystenterostomy performed was done with Murphy buttons especially made for me; they were very tiny. In each case the button was passed. It is well known among those who have done much gall-bladder surgery, that there is no operation more difficult than that performed for the removal of a stone from the common bile duct. To assist at this operation I have modelled an instrument to hold up the liver, to grasp the common bile duct at the same time, and permit the removal of the stone and the resuturing of the duct while it is in the jaws of the instrument.

Regarding the matter of removal of stone from the common duct, I have four patients walking about who have a new opening between the gall-bladder and colon. Physiologists tell us that if we pour bile away from the duodenum and into the colon patients suffer untold ills. This is not so. Those patients are in perfect health. I have performed cholecystenterostomy with the small Murphy button; in each case

the button has passed, and the patients have made perfect recoveries. The stones have been left *in situ*. The former operations for removal of stones from the common duct, where we met with many adhesions, were serious matters. A great many of the patients died. I feel that this operation of side-tracking the bile and leaving the stones *in situ* is indicated in some cases, for the reason that the bile in flowing over the stones may disintegrate them and cause them to disappear. At any rate, it does no harm.

At the meeting of the Southern Surgical and Gynecological Association last year, Dr. Haggard reported a case that I had operated upon at Toronto some years ago. At that time I removed from the man from three to five thousand gallstones. I did not dignify them by the name of gallstones, but "biliary gravel," similar in some respects to the gravel that is passed from the kidney to the urinary bladder. I did not expect the man to be any better. Those are the cases in which an operation would be of very little, if any, benefit. The man went to the Johns Hopkins Hospital, and was there operated upon again by someone, and, as I understand, no stones were found. But the symptoms continued; he had another operation done, and they found no stones. Dr. Haggard again operated upon him and found several small stones that were soft in consistency.

DR. RICKETTS.—The same man was in Cincinnati the other day, and had to take enormous doses of morphine in order to relieve a biliary colic.

DR. W. E. B. DAVIS, of Birmingham, Ala.—The paper of Dr. Haggard, which has been referred to by Dr. Ross, was read at the New Orleans meeting of the Southern Surgical and Gynecological Association, and shortly after my return home from the meeting I was called in consultation to see a gall-bladder case. It proved to be the man upon whom Dr. Haggard had operated.

DR. ROSS.—I am glad to have heard what Dr. Davis has said about this case, because it is one of many for which we can do very little in the way of relief. This man, I dare say, will go on in this way until he dies.

With reference to the use of the Murphy button, I will say in this connection that I apply anchoring strings, let them float away in the intestines, if I do not believe the stone will remain behind in the gall-bladder, because the dragging that is produced by the floating tassel-ends in the fecal matter has a tendency to pull the button away from the gall-bladder. It is only advisable to use small buttons in these cases. The ones I used were tiny. In those four cases I have mentioned I used buttons that came away. What more could be done I do not know.

Regarding drainage, I agree with much that has been said. In my previous remarks I think I forgot to mention the postperitoneal pouch. We can insert a glass drainage-tube, surround it with a gauze wick, and instruct the nurse to attend to it every hour or every two hours. There cannot be a flow over the line that is presented by the mesocolon; it acts as a barrier and keeps the fluid back; it flows then into the peritoneal cavity. Keep that dry and patients will recover.

DR. HALL.—Let us suppose you have a case of suppuration with infection of the gall-bladder and gall ducts. If you insert a drainage-tube with gauze packing, instruct the nurse to drain as you have directed, and a few minutes before the hour is up there is a little accumulation of fluid and the patient vomits and disseminates that fluid, do you think there will be danger of infecting the general peritoneal cavity?

DR. ROSS.—If there was pus beforehand, yes. The gauze helps to drain to a certain extent; it is a great barrier of itself. I have practised this method and find that the patients get well. I have not been forced to drain through the posterior pouch. If we have a large collection of pus around the gall-bladder that has perforated, then perhaps transperitoneal drainage would be sufficient in such cases.

DR. A. GOLDSPOHN, of Chicago.—Touching the subject of unique cases for diagnosis, I recall one that I had about a year ago of a woman, aged forty years, who presented herself with a painful tumor to the right of the umbilicus, the area of dulness extending from the tumor to the liver. But, aside from that as a physical sign, she presented no symptoms of gallstones. She was never jaundiced, nor had she any attacks of colic. The mass was larger than I thought the gall-bladder could ever become, and seemed to be movable. The difficulty in diagnosis with me was, Is it an enlarged floating kidney that has possibly become adherent toward the median line, or is it an enlarged gall-bladder? I could not decide between these two. So I thought I would make the less dangerous incision down over the migrating kidney. This I did, and found a floating kidney. I had now to sever it somewhat from the adhesions to bring it back and anchor it in its approximately normal position, but while manipulating about the kidney I felt gallstones through the membranous tissue, as well as a large gall-bladder that lay between the kidney and the umbilicus. So, after stretching the kidney back, I made an incision upon the gall-bladder anteriorly and did the customary cholecystostomy, removing somewhere in the neighborhood of one hundred stones. I made a careful search with sounds and forceps,

and thought I had removed everything, but in a few days out came more stones the size of a hazel-nut. These continued to come. The wound closed in the course of six weeks.

As to the etiology of gallstones, what Dr. Cumston has said is largely true, that the best researches upon this subject go to argue that it is from infection chiefly that gallstones originate. Furthermore, that gallstones are only one of the accidental products of infection; that they do not constitute the chief pathology. The presence of gallstones does not always determine the suffering of a patient nor the need of an operation, but it is infection which may result in cholecystitis, or in gallstones, or in both. This view of the pathology explains how it is that men like Dr. Vander Veer and Dr. McMurtry, when they operate and do not find any stones, cure their patients. The experience of Dr. McMurtry in not being able to find the gall-bladder in his case is accounted for in the rational process of pathology. The persistent existence of inflammation causes a connective tissue deposit and contraction, and in the thorough search, which he undoubtedly gave, he severed the adhesions, and the patient was undoubtedly suffering from these adhesions, which he released or separated incidentally in his search for the gall-bladder.

Many of these gall-bladders should be drained, whether stones are present or not. They may be accidentally found in the process of drainage.

Dr. Futterer, pathologist of the Northwestern University Medical School, Chicago, has cultivated, in Germany, the typhoid bacillus from the secretions of the gall-bladder. He has made further similar researches and has reported his results in a creditable article in Virchow's *Archives*, which is a pathological journal of very high standing. So if we accept the pathology of cholecystitis as being due to an infection, and the presence of gallstones also due to that, it becomes a matter of great importance to select a correct route for drainage. Is it rational to drain the gall-bladder into the colon? I should say no, but drain it in the manner Dr. McMurtry has stated. In many cases where there is no abscess it can be done by gauze drainage, adding tubular, if necessary. The presence of gauze, as a foreign body, causes agglutination of peritoneal surfaces, so that a tube is established. Drainage should be outward and not into the colon by any means, because we know that the colon is the home of the colon bacillus. The jejunum and the ileum are better; but cholecystenterostomy is not a popular operation any more with many of the best surgeons.

Dr. J. Henry Carstens, of Detroit, Mich.—The greatest difficulty, it seems to me, in connection with cases of cholelithiasis, is the

question of diagnosis. It is a serious thing to open a patient's abdomen and say he has gallstones, if after you have opened it you do not find them. Personally, I agree with what Dr. McMurtry has said, and I am not so sure about the existence of gallstones, even though the patient may have symptoms of their presence. I hedge before the operation. I do not promise a patient that there are gallstones in his case. I cannot consistently do such a thing, for the reason, in many instances, when we open the abdomen for gallstones we do not find them. I tell my patients that their trouble may be due either to gallstones or to adhesions, or that there may be a crossed bile duct, which more or less obstructs and interferes with the free flow of bile and produces the same symptoms as gallstones, or that the bile may be thick and produce symptoms, and that the gall-bladder needs drainage. So, if one should operate and not find gallstones but adhesions, if he separates those adhesions and drains the gall ducts of bile externally the patient will be relieved.

Gallstone surgery is not a very simple thing. Patients do not recover as easily as has been stated. I regard it as one of the most serious operations we have to do in abdominal surgery, namely, to open the abdomen and remove stones from the common duct. If the stones are confined to the gall-bladder the operation is not so serious, and then a good deal depends on whether or not there is a septic condition of the gall-bladder. Can we from the condition of the patient, by the pulse and temperature and general history of the case, say that this is or is not an infected gall-bladder? If the gall-bladder is not infected; if there are stones there simply and the bile contains no active germs, after the ordinary operation the patient will recover ninety-nine times out of a hundred. On the other hand, if we have a pus case, or one in which there is some acute infection, we have a serious operation, and I do not care by what method we operate. In the present state of our knowledge I am not able to say whether or not this or that gall-bladder contains septic material. In the technique of my operations I am very careful to prevent contamination of the abdominal cavity from the gall-bladder. In the first place, I make a small opening. I loosen up the adhesions if there are any. I try to find out whether or not there are any stones present in the common duct. The removal of stones from the common duct is far more serious than removing them from the gall-bladder. We have to drain. If, however, there are no stones, and very often you can determine this before you operate; if you find the gall ducts are perfectly clear, then you simply direct your attention to the gall-bladder. After loosening the adhesions I take hold of the gall-bladder with the

point of a forceps, pull it up, and carefully stitch it all around to the peritoneum and to the fibres of the internal oblique, and I do not allow any of the contents of the gall-bladder to come in contact with the abdominal cavity.

DR. RICKETTS.—What do you stitch it with?

DR. CARSTENS.—Dry sterilized catgut. The gall-bladder has not been opened; it is full of gallstones; it sticks out between the fibers of the rectus muscles. I take a pinch of that (illustrating) with my scissors, and the bile runs outside of the wound; then I float out the gallstones, or take hold of them with forceps. I have an opening large enough to admit my finger, and assure myself that I can get them all out. If I consider the case infectious, the infection never comes in contact with the peritoneal cavity; it goes outside, and I drain it. But if it is a clear case and the diagnosis is beyond any question, then I pull it out, open it, remove the gallstones, stitch up the gall-bladder, and drop it back into the abdominal cavity.

DR. W. E. B. DAVIS, of Birmingham, Ala.—There is one class of cases that has not been referred to by Dr. Vander Veer, and which I alluded to in a paper read before the Association last year. I refer to those cases in which there is involvement of the common duct and the liver is much enlarged, extending down near the umbilicus—cases in which the patients have got in an extreme condition. You cannot reach the common duct. In one such case I concluded there was an abscess, made an incision in the right lobe of the liver, and established drainage of bile, the patient making a satisfactory recovery. He is a prominent lawyer in our State, and is now in perfect health. Some weeks later I had another case in which there was a stone in the common duct. The patient had delayed operation so long that her condition was extreme. The liver was much enlarged. I made a free incision into the liver and drained the bile. The organ was reduced in size. Later a stone was passed, and she recovered. The point I desire to make is that in some cases where the liver is much enlarged it is good surgery to freely incise it, and if you should get much hemorrhage you can control it by gauze packing.

It has been stated that bile is harmless. A small amount of bile in the abdominal cavity is comparatively harmless, while a great amount or the constant flow is exceedingly dangerous. In more than a hundred experiments on animals, in which I had an opportunity to demonstrate this, I found that animals with a large quantity of bile in their peritoneal cavities would die, as a rule, in from twelve to forty-eight hours. The viscera would not have the appearance of septic peritonitis. Death resulted very much as it does in cases of

toxemia. It is, therefore, a serious matter to have a great quantity of bile in the abdominal cavity, unless it is walled off and subsequently drained through the biliary tract or externally.

In regard to operations on the gall-bladder, it has been well said that to Marion Sims we owe the beginning of this work, and although it has been credited to Bobbs, of Indiana, Dr. Joseph Eastman has established the fact that Bobbs simply opened an abscess. He did not do a cholecystostomy. Sims' work was original, and he deserves credit for the operation. We owe much to Mr. Tait for the perfection of the operation and its popularity.

In operations upon the common duct too much cannot be said in favor of quick work. The use of normal salt solution by hypodermoclysis is a great aid. Only a few weeks ago I prolonged a patient's life many days by injecting three pints of the solution several times daily.

I was glad to hear Dr. Vander Veer indorse drainage of the common duct without an attempt to stitch it up in a large proportion of cases, because it is certainly the rational and proper way to treat them. If we do a long operation on cases in which there is marked cholemia they will generally die. This method of operating without an attempt to stitch up the duct is becoming very popular. We should always use a glass tube with the gauze, and should not be contented to have the nurse draw off the fluid every hour, but should adopt the plan suggested by Dr. Joseph Price in his drainage cases years ago, namely, of having the tube watched and emptied frequently, say every ten or fifteen minutes at the beginning. In this way you avoid the trouble spoken of by Dr. Hall. Drainage is not only successful with aseptic bile, but in septic conditions. In my own experience I have had an opportunity to show in the human subject that the viscera would be well walled off, and many times I have demonstrated this in aseptic and septic operations on animals.

Dr. Ross.—When a stone has been removed from the common duct and left a wide gap in it, is there not some danger of the bile not finding its way into the intestine? That is one reason why I prefer cholecystenterostomy.

Dr. Davis.—In the cases I have experimented on this has not occurred. The bile has found its way into the intestine. We find that there is a walling off, and a fistula will form externally through which the bile will discharge from two to six weeks, just as in a cholecystostomy. In removing the gall-bladder without tying the cystic duct there is usually very little discharge of bile if there is no obstruction in the common duct. Those who resort to cholecyst-

ostomy will act wisely if they insist upon not tying the duct, because there is great risk of a stone being overlooked, followed by death of the patient. By using gauze and a glass tube you insure the safety of the operation.

Dr. Richard Douglas, of Nashville, Tenn.—I have noticed one thing in connection with the discharge of bile after the operation of cholecystostomy which may be of some value. I have had two patients in whom there was no discharge of bile during the day, but bile was discharged freely at night. These patients were watched carefully for some time. I sought an explanation for it, and the only one that appears in any way to explain the reason for it was, perhaps, the time of taking food that may have had something to do with it.

I have had cases come under my observation, that have emphasized the point brought out by Dr. McMurtry, of small gall-bladders. I have found them associated with a peculiar, anomalous condition of the liver, a linguiform viscus. In one case I could not bring the gall-bladder in contact with the abdominal wall. I could not close it, and so I had to close the gall-bladder and drain for safety.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I wish to speak of one phase of this subject only, and that is with reference to the treatment of those cases in which there is a stone in the common duct not associated with drainage. We all recognize the fact, when the stones are confined in the gall-bladder and there are no complications, that the removal of the gallstones is one of the simplest operations, and the mortality is very low. Excepting extrauterine pregnancy, I venture to say that the mortality is the lowest of any intra-abdominal operation. After all, I believe our unsuccessful cases should be reported. If all the deaths were correctly reported of operations upon the common duct we would have a good many more deaths tabulated than there are today. There is a disinclination on the part of surgeons to report unfortunate results. If they do not report them at once, a little later they forget to do so. The death-rate of incising the common duct in all reported cases is something more than 50 per cent. I dare say that if all the operations made by experienced operators in incising and removing a stone from the common duct could be tabulated the mortality would be nearer 80 per cent. I take it that the large death-rate is due to inefficient drainage in most of the cases. We know that it takes only a small quantity of fluid to overflow the little sac and flood the peritoneal cavity, and I am certain I have lost patients that were drained carefully with glass drainage-tubes, protected with gauze packing around them in the most artistic manner. The results were promising when the drainage-tubes were inserted. Autopsy

showed quite a collection of fluid in the peritoneal cavity of the patient. If the method suggested by Dr. Vander Veer overcomes this difficulty, and we can get continuous drainage before the fluid itself floods the general peritoneal cavity, it will certainly lessen the death-rate in this desperate operation. I say desperate operation! I do not know of any operation in surgery which is more desperate than the removal of a stone from the common duct, taking one case with another.

I am favorably impressed with the method advocated by Dr. Vander Veer, and I shall try it when I go home and continue it if I do not get a higher death-rate than I have had by the other method.

DR. VANDER VEER (closing the discussion).—I feel grateful to the Fellows for their earnest and excellent discussion. I have learned a good deal in listening to the discussions of the various speakers.

Dr. Ricketts in his remarks said that he did not think I had referred sufficiently in my paper to the work of Dr. Davis. In my paper there will be found a sentence in which I distinctly stated that our advance in gall-bladder surgery is largely due to the work of Fellows of this Association and other surgeons. I meant Dr. Davis when I said that; I meant all good men who are connected with this Association, and all good men in this country, without attempting to individualize particularly. Drainage was one of the most important features of the paper.

Reference was made to the use of the Murphy button for doing anastomoses. I have used it in my early operative work, and I must say that I look upon it as a most delightful operation to do. If we have a good-sized gall-bladder or dilated common duct to work with, anastomosis by the Murphy button is a charming operation, and I have had good results with it.

Dr. Gilliam brought out a good point in regard to the Trendelenburg position in making the examination. I have elevated the patient's hips with a solid pillow, and have obtained some benefit in that way, but I shall try the Trendelenburg position more thoroughly.

Dr. McMurtry brought out some excellent points, but I must say that I have not had the experience that he reported in his case of not finding the gall-bladder. There are a number of cases on record of congenital absence of the gall-bladder, and yet there is one case which I recall to mind particularly in which the patient suffers from symptoms precisely like those mentioned by Dr. McMurtry in his case. This patient presented all the symptoms of gallstone trouble, but no gall-bladder could be found. I believe in some cases where

we open the abdomen and simply loosen up or separate the adhesions, we benefit the patients and save them from future suffering.

About three years ago I operated upon a clergyman in our city sent me by Dr. Hun. He was taken to my private hospital, and I told him that he had gallstones, something I never said before, and have never said it since. His wife was present as well as sisters. I operated, and not a gallstone did I find anywhere. Several members of his congregation seemed to have remembered that. However, he made a splendid recovery. I separated the adhesions that I found, drained, and he recovered from all his suffering. The remaining sinus healed without aid in eighteen months.

As regards the method of drainage referred to by Dr. McMurtry so clearly, I want to refer to it particularly. Somehow or other in my experience I do not find gallstones entirely in fleshy people. I have found them, perhaps not so frequently, in people who are thin and emaciated.

Mayo Robson has given us a short chapter on healthy bile in the peritoneal cavity, and he reports a case in which he thinks over a pint of it was taken care of by the peritoneum, and no serious results followed. We do not anticipate healthy bile in these cases. There is no doubt about the presence of the typhoid bacillus and the bacillus coli communis, etc., in these cases, and we get infection. These germs help to build up gallstones, and they in themselves infect the gall-bladder, poison the peritoneum, and produce septic peritonitis, so that it is in such cases that I have found it difficult to drain transperitoneally, which was so clearly referred to by Dr. McMurtry. In cases where I cannot resort to that method of drainage I make use of the peritoneal pouch.

I was glad to hear Dr. McMurtry's remarks regarding those cases in which we have profound cholemia. I believe we could all report cases operated on in that condition, but the mortality is something fearful. It is very essential that we should be careful in selecting the class of cases to be operated upon. It is no credit to surgery or surgeons to operate on dying patients.

The remarks of Dr. Cumston with regard to diagnosis were certainly very instructive and interesting, and I must say that gallstones are made up partly by pathogenic bacteria. In these days it is comparatively safe to make an exploratory operation for the purpose of separating the adhesions, even if we do not find gallstones.

In my paper reference is made to stones in the hepatic duct of a physician who was seen by Dr. Loomis at the time. We had a very careful discussion of his case. Within the past six months a brother

of that physician has come under my observation, and in examining him we could make out an enlargement near the median line. We thought the gall-bladder might be pushed over somewhat to the left, and that there might be gallstones present or a diseased gall-bladder. He presented some of the symptoms that his brother had. In addition, he had pyrosis. He was emaciated. Dr. Macdonald and I said to him that it would be necessary to make an exploration. This was one of the cases that Dr. Macdonald was to report in his paper had he attended this meeting. We made an exploration, and after enlarging the incision so that we could get down to the mass thoroughly, Dr. Macdonald and I both thought for a moment that we had a case of carcinoma of the liver, but, as Dr. Macdonald loosened up the adhesions somewhat, there came up into the incision the lobus spigelii, which had developed a condition of angioma as perfect as one could wish. We had no trouble in removing it in its entirety, applying four ligatures and the thermocautery, and had no unpleasant hemorrhage. We used a glass drainage-tube, packed around it, and it was removed on the fourth day. Wound healing was perfect. The patient recovered and has gained in weight. To a large extent nothing but an exploratory incision cleared up the case, and this case simply shows the good results following thorough exploration.

Reference was made by Dr. Ross in his case in regard to opening through the gall-bladder. This was certainly a very creditable operation, and one that relieved his patient in a neat way. The drainage was fortunate in that direction. But in the class of cases I have referred to, of operations upon the common duct, we cannot drain through the gall-bladder in that way.

In regard to anastomosis with the Murphy button, it is a beautiful operation to perform with a small button. When I did it I did it as I had been advised to. I did it upon a patient in which the stone did not pass through, but remained in the common duct, and the patient had her usual colicky attacks and suffered considerably. I believe it is much better to remove the stone. In a case of stone in the common duct it is better to make an incision, remove the stone, and drain in the manner that I have referred to. Dr. Morison was really the first to refer to this peritoneal pouch. But Mayo Robson in his recent volume speaks of it and gives a very good plate which I intended to present here.

Dr. Goldspohn's reference to dissecting up a portion of the parietal peritoneum is a very good one, and it is an excellent suggestion to bear in mind.

In regard to the remarks of Dr. Carstens, if we do an operation

upon the gall-bladder now no criticism is made if we do not find gall-stones. Relief is often afforded these patients by simply breaking up the adhesions. Some patients are much benefited by this simple procedure.

Coming to Dr. Davis, he is entitled to more credit than any of us for the excellent original work he has done in connection with the surgery of the gall ducts. I have studied his contributions with much care, and I have been greatly benefited by the suggestions he has made.

Dr. Davis brought out an excellent point in regard to the use of normal salt solution in connection with or before these operations. I have resorted to its use after operation, but I have not done so deliberately with the belief that it would help the patient in the beginning. I have done it after operation the same as we do it in abdominal work, and have seen excellent results from its use in that way. I have drained the gall-bladder in the manner Dr. Davis refers to, and have seen the liver decrease in size very materially. I have seen it, when there seemed to be obstruction of the common duct, so enlarged that I was quite sure there was some disease of it; yet after exposing it I had simply an enlargement to deal with, and by instituting drainage I have seen the organ return to its normal condition.

It is difficult to answer the question of Dr. Douglas, as to the observation he has made of discharge of bile occurring more freely at night than during the day. I have seen the same thing occur, and I have thought it was possibly due to the calm, recumbent condition of the patient, and in some way the liver is not in a mood to take advantage of the different conditions to secrete bile as freely during the day as it might.

Dr. Hall's remarks were very appropriate indeed. The plain cases of gall-bladder surgery are comparatively easy to operate on. I tried to bring out in my paper important points with reference to the anxious or difficult cases.

From the cases that we have drained through this peritoneal pouch, and from the earnestness with which Mayo Robson refers to it, we have considered it worthy of our attention, and I ask the Fellows to look into it carefully and report at a later time their experience in this direction.

THE DIAGNOSIS OF ECTOPIC PREGNANCY BEFORE RUPTURE, BASED ON ELEVEN CASES.

By J. F. BALDWIN, M.D.,
COLUMBUS.

"No authentic description exists of an unruptured tube-pregnancy" (Lawson Tait, *Diseases of Women*, 1889, page 451). "I defy anybody to have diagnosed such a case beforehand, for the woman had not even missed a period" (*Ibid.*, page 452).

Our real working knowledge of extrauterine pregnancy dates back only about twenty-five years. Previous to that time deaths were reported from so-called accidental hemorrhage into the peritoneum, and also deaths from intraperitoneal and extraperitoneal hematocele. Many cases had been reported of fetuses found in the abdominal cavity and of lithopedions found many years after the pregnancy from which they dated their origin, but it was not until twenty-five years ago that from a careful study of these cases, and as the outgrowth of these late diagnoses, data were arrived at from which we derived accurate knowledge of the pathology of ectopic gestation.

While, a few years ago, the rank and file of the profession could not but regard as extraordinary the diagnostic acumen of the men who could make the diagnosis of tubal pregnancy on the occurrence of rupture, at the present time, with the increase of literature on this subject and our better knowledge of its symptomatology, intelligent physicians everywhere expect uniformly to make a correct diagnosis on such occurrence. The sharp, colicky pains, the syncope and the collapse at once attract attention and point almost unerringly to the diagnosis. But a diagnosis deferred until rupture has occurred necessarily results, in a large proportion of cases, in being but the mere preliminary to a fatal termination. The patient may be far removed from surgical assistance, and death may occur long before such assistance can be obtained.

With our present knowledge on this subject, I believe it is now possible, in a fairly large proportion of cases, to make a diagnosis of tubal pregnancy before the occurrence of rupture. This statement, I know, is in direct contradiction to statements made by Mr. Lawson Tait in his published writings of 1888 and 1889; but the profession at large knows much more of ectopic pregnancy now than it did ten years ago, when Mr. Tait reported that he had seen but one case of ectopic pregnancy before the period of rupture, and in that did not make the diagnosis at the time of the examination, but found the ruptured cyst three days later at the operation, which had been made imperative on account of the supervention of alarming symptoms.

It is true that in many cases of tubal pregnancy no symptoms occur which lead the woman to suspect that anything is wrong, least of all to consult a physician, until the occurrence of alarming symptoms due to rupture and the resulting hemorrhage. Nevertheless there are unquestionably very many cases in which symptoms do arise, and in which a physician is consulted, and in which a presumptive working diagnosis is clearly possible.

There are no pathognomonic symptoms of tubal pregnancy or of any other form of ectopic pregnancy. Usually, however, we find the following points: The patient gives a history of several years of sterility (many exceptions); she has missed a menstrual period, perhaps two of them (numerous exceptions); she has noticed some unusual pains in the pelvis, which she will probably describe as boring, griping, or colicky in character, these pains being situated usually in the region of an ovary; she has perhaps, within a few days of the time of consulting her physician, had a more or less irregular hemorrhage; perhaps has discharged pieces of membrane which she supposed indicated an abortion, and consults her physician with the idea that such is the case, owing to the hemorrhage and the pain and the suspicion of an existing pregnancy. Possibly, however, there has been no suspicion of a pregnancy, as the woman has accepted her sterility as incurable and has dismissed from her mind such a possibility.

On making a vaginal examination, if the conditions are at all favorable the examiner will find upon one side or the other of the uterus, or back of it, a fusiform, quite well-defined cystic tumor about the size of a pullet's egg or a little larger. This tumor

will probably be quite tender on pressure, will be quite symmetrical in outline, and will usually be distinctly pulsating. When such a tumor is found in a woman in whom we have reasonable grounds to suspect a pregnancy; when the uterus at the same time is found somewhat enlarged and having the feel of pregnancy, but not enlarged as much as we would expect in a pregnancy of so long continuance as the history indicates, a presumptive diagnosis of tubal pregnancy is warranted, and the matter of an operation should be carefully and without delay considered.

There are a few conditions which give us the same kind of a tumor as is found in these cases. These conditions, however, are seldom accompanied by the other symptoms which have been enumerated, and are in themselves such as to warrant, if not to demand, operative intervention. An enlarged and adherent ovary in Douglas' cul-de-sac cannot, perhaps, be differentiated from a tubal pregnancy in the same location. An old pyosalpinx, a hydrosalpinx, a small cyst of the broad ligament, or an enlarged ovary in its normal location might be mistaken for an unruptured tubal pregnancy. It is not likely, however, that any of these conditions would be accompanied by symptoms pointing to an ectopic pregnancy, and yet they may; but all these conditions are such as to justify operative interference. If the operator, suspecting a tubal pregnancy, finds a pus-tube, as I have twice done, or a cystic ovary, he has certainly benefited his patient by their removal; while if he finds an unruptured tubal pregnancy he has, by a very safe operation, saved his patient from the gravest of dangers. In other words, he has performed an operation the mortality of which in experienced hands is almost *nil;* while the mortality of ruptured tubal pregnancy, though necessarily unknown, is certainly frightful.

In order to render the early diagnosis of ectopic pregnancy possible, it is necessary for physicians to learn to suspect it and to examine with that suspicion in mind. The physician who, without making any examination, tells all middle-aged women who come to him complaining of irregular hemorrhages that they are merely having the change of life, will not likely make an early diagnosis of cancer of the uterus, and he will probably tell his patients who come to him with symptoms of ectopic pregnancy that they are merely threatened with a miscarriage. He will make

no further investigation, and hence will uniformly fail to make a diagnosis. The physician, however, who, having in mind the possibility of an ectopic pregnancy, thoroughly examines all patients whose history and symptoms point to this condition, will, in a large proportion of cases, make a correct diagnosis and by prompt intervention will achieve a signal triumph for himself and his profession.

Menstruation. One menstrual period, perhaps two, has ordinarily, but *not always*, been missed, or the last menstruation was in some particular irregular. There has occurred, perhaps, a dribbling of blood, but not a normal flow. There may have been a discharge of clots, or possibly a decidual membrane resembling the membrane passed in an early miscarriage. If such membrane can be obtained, microscopical examination showing the absence of chorionic villi would render a diagnosis positive; but these membranes have usually been destroyed.

Sterility. Not too much stress should be placed upon the previous sterility of the patient. This should be taken into account in a summary of the symptoms, but it is not of much moment, since in many cases there has been no such previous history.

Pain. The pain of a tubal pregnancy is usually sharp and colicky in character and quite distinctly localized on one side, or it is of a dull, boring, constant character—a steady, severe ache. The pain in the one case is due to the internal stretching, with a slight giving way, of the peritoneal investment of the tumor. In the other, the pain is due to the constant tension of the tumor walls, but without as yet any local yielding. The sharp, colicky pain is therefore very apt to succeed the other in point of time. The pain may be very severe, so severe as to result in some acceleration of the pulse during its continuance, but there is no elevation of temperature. Possibly the pain may be so severe as to result in fainting, but faintness is rather a symptom of at least partial rupture, with some hemorrhage.

A woman who consults her physician presenting these symptoms, or several of them, should be at once carefully examined with the idea in mind of a possible tubal pregnancy. If that examination reveals a tumor such as has been previously described, the presumptive diagnosis of tubal pregnancy should be made and an operation unhesitatingly advised. The remote possibility of a

mistake in diagnosis should be explained to the patient or her friends, but there should be no hesitation in urging an immediate operation. A slip, a misstep, any sudden alarm even may in a moment precipitate rupture with all its unfortunate consequences.

At the Atlanta meeting of the American Medical Association (1896), in a discussion on this subject in the section of Diseases of Women, I reported five cases in which I had made the diagnosis and had operated on tubal pregnancy before rupture. (Two of these cases occurred in the same patient at an interval of eight months.) I believe I was the only one present who had ever made such a diagnosis and had so operated. Since that time, however, a number of such operations have been made, and I think there can be no doubt that the time has come when such cases will be reported with increasing frequency, until the diagnosis in suitable cases becomes recognized as an essential duty of the well-qualified practitioner.

This preliminary presumptive diagnosis must be made by the family physician. It will later be verified by the surgeon, but the early diagnosis of ectopic pregnancy, like the early diagnosis of uterine cancer and of appendicitis, must depend upon the education of the family physician.

The following six cases have occurred since the five which I reported in 1896:

CASE VI.—April 24, 1898, Mrs. S., aged twenty-two years; married two years; never pregnant; menstruation always regular. Menstruation came on at the usual time five weeks ago, but has continued up to the present time merely as a dribbling of blood. Has always enjoyed excellent health. Knows of no reason for not becoming pregnant. Has been having a feeling of weight and bearing-down in the pelvis, with a constant aching sensation which she locates in the womb. Vaginal examination shows the uterus somewhat enlarged and pushed forward toward the pubes by a mass in Douglas' cul-de-sac. This is elastic, smooth in outline, somewhat tender, but without general pulsation. As there has been no history of any trouble prior to the last menstrual epoch, the probability of a tubal pregnancy seemed great, and an exploration through Douglas' cul-de-sac was advised. This was made two days later, and revealed a greatly distended tube without rupture, but with some free blood in the cul-de-sac, the hem-

orrhage having come from the open end of the tube. The specimen removed revealed a pregnancy estimated at about six weeks' duration.

CASE VII.—December 8, 1898, Miss McD., aged twenty-four years, servant. Had one miscarriage at three months two years ago; no other pregnancies. Has not been entirely well since the miscarriage. Denies having had any pelvic disease; no dyspareunia. Was unwell regularly and normally two and one-half weeks ago. Complains of pain and bearing-down in the pelvis and back. Pains somewhat like labor pains came on just before the last menstruation, and have continued ever since. Has had no nausea. Has had no intercourse since menstruation. Vaginal examination shows a very tender mass back of the uterus the size of a pullet's egg. This mass is excessively tender. She is positive that this tenderness has existed but for a very short time. Pulsation is distinct. The right ovary can be outlined; the left ovary also, but very indistinctly. The diagnosis seems to lie between a pus-tube, which her history negatives, and a tubal pregnancy. Operation through the vagina December 10th. The right tube was found in Douglas' cul-de-sac, being held there by light adhesions. It was removed without difficulty and the entire specimen turned over to the pathologist for examination. He reported later that the specimen was that of a very early tubal pregnancy. Impregnation in this case probably took place just before her last menstruation. (Saw a moribund case, some years ago, in which fatal rupture of a tubal pregnancy had occurred in a prolific multipara three weeks after the cessation of a perfectly normal and regular menstruation, and without the slightest suspicion of a possible pregnancy in the mind of the patient.)

CASE VIII.—May 5, 1899, Mrs. K., aged twenty-four years; married four years; had a miscarriage during the first year of married life; no pregnancies since. Menstruated naturally, commencing on March 20th. Had always been very regular, and expected to menstruate April 18th. The flow did not come on, however, until the 28th; continued for about five days, then stopped one day, then recommenced, and has continued as a mere show up to the present time. During this time she has had more or less pain in the right side of the pelvis. This pain was described as "cramping" in character. Has never had the slightest

irregularity in menstruation before. Examination shows the uterus retroverted and adherent. Back of it and low down is a tender, cystic mass the size of a small hen's egg. This is also adherent. She is sure that this tenderness could not have been there but a very short time. Diagnosis of a tubal pregnancy was made and an operation advised and made the next day per vaginam. The tube above the sac was ligated with catgut and the sac easily removed. Examination of the specimen verified the diagnosis.

CASE IX.—August 22, 1899, Mrs. S., aged thirty-seven years; mother of five children, the youngest three years of age; was unwell last from the 20th to the 25th of June; has had no show since. Several times during the last few weeks has experienced cramping sensations in the abdomen, more marked on the left side. Four days ago was taken with severe pain in the lower abdomen and sent for Dr. Mayhugh, her physician. He found a tender mass on the left of the uterus, the exact character of which he did not understand, but which led him to suspect ectopic pregnancy. Pain still continues, but is less severe. On examination I found a well-defined mass to the left of the uterus, the uterus itself pushed over to the right. Could not detect pulsation. From the character of the mass and the history, concur in the previous diagnosis of ectopic pregnancy and advise immediate operation, which was made the next day. On opening the vault of the vagina I found some blood which had extruded from the open end of the Fallopian tube. The tube itself was distended to the point of bursting by the embryonic mass. In drawing the tube down into the vagina to effect its removal it was torn off near the horn of the uterus. The hemorrhage following the tearing was not very great, but it seemed best to secure its effectual control by opening the abdomen. This was done and the operation completed without any difficulty. Examination of the tumor revealed placental tissue and a very minute embryo. (This patient became pregnant normally in October, and was safely delivered at full term.)

CASE X.—March 27, 1900, Mrs. S., aged thirty years; mother of four children, youngest two years of age; no miscarriages; no history of any pelvic disease. Should have menstruated ten days ago, but had merely a show at that time. It came on freely, however, a week later, and there is still some dribbling; no clots. Commenced having pain in pelvis a week ago, but had severe pain

in the right side of the pelvis and epigastrium two weeks ago. Still has pain in the right side; this spot is "sore." Has never had any such disturbances as this before. On examination find a tender, pulsating mass just back of the uterus and to the right, continuous with the uterus; is very tender; pulsates indistinctly; about the size of a hen's egg. Diagnosis of tubal pregnancy seemed plain. Operation, made the next day, showed an ectopic pregnancy in the right tube, which was in Douglas' cul-de-sac and adherent. While breaking up the adhesions the sac ruptured, and the embryo was lost in the moderate hemorrhage which followed. Microscopic examination confirmed the diagnosis.

CASE XI.—May 19, 1900, Mrs. W., aged twenty-six years; mother of one child, aged three years; no miscarriages. Patient has always menstruated regularly and normally, the last time being March 1st. Some time after this menstruation she commenced having pains in the pelvis, especially on the right side. These have persisted until the present time, but have been much worse of late. She consulted her family physician, Dr. Dixon, some two weeks ago, and he at once suspected the possibility of an ectopic pregnancy. She declined an examination and passed from observation. Yesterday and last night she suffered with intense pain, and he was again called. On examination he found a condition of affairs confirmatory of his previous suspicions. Her pulse is good, but she complains of feeling short of breath and of pains resembling those of angina pectoris. Patient is quite fleshy, with thick abdominal walls; nevertheless, an indistinct mass can be made out on the right of the womb. This is quite tender, but without any distinct pulsation. There was no tenderness in this region previous to this sickness. Advise that the patient be prepared for an operation, an anesthetic be given, and, if examination confirm the suspicion of ectopic pregnancy, an immediate operation be made. The patient was at once transferred to hospital and this procedure carried out. The examination under the anesthetic abundantly confirmed the previous suspicion. As the mass was higher up than usual in the pelvis, the operation was made by the suprapubic route. Some blood had escaped from the fimbriated extremity of the tube, but the tube itself had not ruptured. Examination of the specimen verified the correctness of the diagnosis.

DISCUSSION.

DR. EDWARD J. ILL, of Newark, N. J.—I would like to ask Dr. Baldwin as to the nature of the contents of the tube in these cases.

DR. BALDWIN.—In nearly all the cases there were some blood-clots, pure and simple, but other tissue, chorionic in character, established the diagnosis. Several of the specimens were turned over to the pathologist unopened, and I have not seen them since. In one instance the pathologist thought I had made a mistake in diagnosis, as his first casual examination resulted in finding nothing. In re-examining the specimen, however, under the microscope he was able to identify the fetal tissues, the notochord being distinctly visible. In several of the eleven cases the fetus had escaped owing to rupture of the tube during removal. The specimen, however, on microscopic examination, revealed chorionic tissue, and thus established the diagnosis.

DR. ILL.—After hearing what Dr. Baldwin has said regarding the contents of the tube, namely, that there were some blood-clots, we stand now where we did before in reference to early diagnosis of tubal pregnancy. These were cases of beginning rupture. The diagnosis presents no difficulty at that time. From the title of the doctor's paper we are led to understand that the diagnosis was made before there was any rupture of the mucous membrane, or any disturbance in the circulation of the chorion producing a hemorrhage into the tube. I do not think there is so much difficulty about the diagnosis in these cases when it comes to that sort of thing. I should like to see the diagnosis made before there is any blood-clot in the tubes. Nevertheless, Dr. Baldwin deserves great credit for bringing this form of beginning rupture before the profession, and I am sure will soon hear of the good fruits borne by his paper.

DR. CHARLES A. L. REED, of Cincinnati, Ohio.—I unfortunately missed the first part of Dr. Baldwin's paper, but that part which I did hear interested me greatly, for the reason that with me, as with the other gentlemen present, this is a practical question. The remark made by Dr. Ill just before leaving the floor, in which there was a good deal of truth, has impressed me for a long time, and that was, that to make a diagnosis of tubal pregnancy before the time of rupture it is necessary to have the patient under observation for a considerable length of time. Fortunately for me, about seven years ago I had such a case. The patient was under observation for laceration of the cervix which I had operated on, and about the time I operated she complained of some disturbance in the pelvis. A careful explora-

tion revealed enlargement of the appendage upon one side. She had a dribbling menstruation, just before the time I did this operation, which did not attract either her or my attention. Shortly after the operation she began to develop some of the reflex phenomena of pregnancy. The coincidence of these symptoms with a beginning enlargement of the appendage on one side aroused my suspicion as to the character of the trouble, and I went so far as to make a diagnosis and warned her of the probable condition within her pelvis. She went along until about the tenth week, the tumor gradually enlarging; it did not yield to the ordinary conservative treatment of douches, salines, rest, etc. I then made a diagnosis of ectopic pregnancy, and advised operation, to which she submitted. I operated, and reported the case to one of our local medical societies.

The paper of Dr. Baldwin leaves us, as stated by Dr. Ill, where we were before—that is, we have a certain congerie of symptoms which, taken together, indicate ectopic pregnancy. We have no pathognomonic symptom; we have no one condition by virtue of which we may say to a patient that she has an ectopic pregnancy until rupture has taken place, and then all of the other symptoms, taken in association with rupture, make the diagnosis reasonably certain.

Dr. Ricketts.—What was in the tube removed from your patient, and what was the condition?

Dr. Reed.—It was filled full of decidual membrane and became the seat of infection only latterly, and the decidual structure was markedly developed.

Dr. Jelks.—Was there any fetus in it?

Dr. Reed.—The fetus became broken down on account of infection, but the decidual structure, as I have previously said, was very distinct.

I am sure that the entire profession will express a sense of profound gratitude to Dr. Baldwin for calling our attention anew to those symptoms which indicate ectopic pregnancy. But the misfortune in the majority of cases is, that even those symptoms pass unnoticed until the critical moment arrives; yet it is true, early diagnosis, in order to be made available, must be made by the attending practitioner. But I do not see that we are able to give him the means of making that diagnosis with much more accuracy than heretofore, except to prompt him to examine his cases and study the conditions which have already been so clearly outlined and defined.

There is one symptom of early tubal pregnancy present, particularly in the case to which I referred, which is one of the earliest, and that is the tendency to a dribbling, shreddy menstruation, due to the de-

velopment of the decidual structures within the uterus. I look upon this symptom, when present, as more nearly pathognomonic that any other one of which we have knowledge.

Dr. L. H. Laidley, of St. Louis.—We have all had cases similar to those reported by Dr. Baldwin, in all of which except one there had been rupture of the sac. In probably three or four it did not force its way out of the peritoneum. In these cases there were pronounced symptoms of ectopic pregnancy. All of the patients were operated on for that condition. The case without rupture was observed after extirpation for cancer.

I fail to see how it is possible for us, without symptoms of rupture, unless there is a possible distention of the tube, to make a diagnosis of tubal pregnancy. You will remember that Noeggerath claims there are no normal ovaries. Nor do I believe there is a uniform appearance of the Fallopian tubes, in order that we may say that this or that one because of its size is normal or abnormal. Hence I fail to see that Dr. Baldwin has given us any landmarks by which we can make an accurate diagnosis of tubal pregnancy, unless the symptoms of pain from rupture or too great pressure disturbing those parts are present. I do not see how we can distinguish the presence of such until some pathologic conditions exist or some disturbance of the organ has taken place.

Dr. E. Gustave Zinke, of Cincinnati, Ohio.—I have listened with a good deal of interest to the paper of Dr. Baldwin, as well as to the remarks that have followed the reading of it, and must agree with all of those who have stated that we have nothing to guide us in any of these cases unless there are symptoms of rupture or some other existing pathologic condition which indicates the occurrence of ectopic gestation. There is no indication, not even justification, for the general practitioner in attendance upon the case to make an examination, unless there are some symptoms unmistakably pointing to trouble within the pelvic cavity. There is no doubt that in many cases a diagnosis of ectopic gestation is easy. If we have certain symptoms to guide us, such as loss of blood, either scanty or profuse, attended with pain; a tumor to one or the other side of the uterus, pulsating in character and growing, there cannot be much doubt that an ectopic gestation exists, especially if it occurs in a woman with a previous history of good health. There are other cases, however, in which the symptoms are obscure, and a diagnosis of ectopic gestation is exceedingly difficult if at all possible. These are the cases in which the ectopic gestation is complicated with other pathologic conditions, or, possibly, a normal pregnancy.

Permit me to relate a case that came under my observation one year ago, a report of which has been published in the Cincinnati *Lancet-Clinic*. In this case one of the ablest physicians in Cincinnati was in attendance from the beginning of gestation, because of repeated and quite frequent attacks of colicky pains accompanied by vomiting and dysenteric evacuations. There was no doubt that she was pregnant, because there was suspension of menstruation, nausea, morning-sickness, and vomiting, as well as enlargement and softening of the uterus. At no time, up to the day of the operation, was the ectopic gestation suspected or even thought of. Indeed, there were every now and then symptoms of well-being for one week and more. During one of these intervals the attending physician did not hesitate to go to Europe, firmly believing that there was no serious difficulty to be expected further than that which attends ordinary pregnancy, and that the vomiting and all the other symptoms would soon cease. Both the vomiting and diarrhea were considered reflex in character and due to the intrauterine pregnancy. A few days after the doctor's departure the patient went "down town," but had to be taken home in an ambulance on account of severe pain on the right side within the abdomen. It was then that I was called to see the case and, upon examination, found her pregnant and the victim of a tumor to the right of the uterus, pulsating in character. Still I did not for a moment entertain the idea of an ectopic gestation. My advice was an abdominal section, because of the presence of a tumor in the right broad ligament which complicated the pregnancy. After a consultation with Dr. Allen an operation was permitted. When we opened the abdomen we found one of the plainest cases of recently ruptured tubal pregnancy. The sac had become adherent to the omentum, anterior abdominal wall, and uterus. Its removal was not very difficult. The patient recovered promptly. At the end of the normal period of gestation, exactly on the two hundred and eightieth day after the cessation of her last menstruation, she gave birth to a twelve-pound boy.

Since then I have looked up the history of the occurrence of ectopic gestation with normal pregnancy, and I have found from the year 1708 to the present time about fifty-six cases, and in some of them both the extrauterine and intrauterine pregnancies went to the end of term. One of the most marvellous cases is the one reported by Dr. von Rosthorn, I think, now in charge of the Maternity Clinic at Prague. His patient was taken to the Vienna Allgemeine Krankenhaus. She had been attended by a midwife in a country town, and after she had given birth to an intrauterine child the midwife

noticed there was another. But they waited one, two, and even three days for the second child to be born, when the patient packed her trunk, went to Vienna, and was operated on at the gynecologic clinic there, and an extrauterine fetus was removed. Both children lived. The mother recovered.

DR. D. TOD GILLIAM, of Columbus, Ohio.—We are very much indebted to Dr. Baldwin for the paper read by him this morning. I can hardly agree with some of the gentlemen who have previously spoken, that there is nothing new advanced with reference to the diagnosis of ectopic pregnancy. I can hardly agree with the idea that these cases were instances of ruptured gestation in the sense we ordinarily regard it. There was no rupture into the peritoneal cavity; there may have been a little separation of the mucosa and the fibres of the muscularis, but that would hardly constitute a rupture, and doubtless there were some of Dr. Baldwin's cases in which this did not occur. There was distention of the tube which undoubtedly gave rise to the peculiar symptoms which he mentioned. It is a great thing to be able to diagnosticate these cases before intraperitoneal rupture, and if we can all succeed in doing this we shall accomplish a great boon to womankind.

The distinction which Dr. Baldwin makes between tubal pregnancy and inflammatory conditions is a good one, and it is well enough for us to bear it in mind always. If it is possible to exclude infection by taking the temperature and observing certain other means at our command, by which we can exclude inflammatory conditions, it will pave the way to a correct diagnosis. In a large number of cases upon which I have operated for ectopic gestation, the old idea that it occurred in sterile women does not hold good. I have found it in women soon after normal labor and soon after abortion or miscarriage. I have found it in all conditions. That which I depend upon most in a diagnosis of ectopic gestation is the extreme tenderness of the parts, along with a certain amount of dribbling of blood from the genital tract. I have seldom seen a case in which I did not find this extreme tenderness in connection with ectopic gestation, and whenever I find that condition of things I am always suspicious of ectopic gestation, and almost always recommend that an exploratory incision be made to determine the matter.

When Dr. Baldwin goes over the ground again he will make clear to us that his observations in this line have been of value, and we will all profit by them.

Dr. Laidley had a case that was exactly the counterpart of one I had some time ago. I believe he operated for cancer of the uterus

and found ectopic gestation. I had a case at that time in which the fetus was probably about six weeks old. I came across the case incidentally during a vaginal hysterectomy for cancer, so that I was entitled to no credit whatever as regards my diagnosis in the case. Of course, I had come across cases in which there was no external rupture of the tube, yet in which I had made diagnoses. I have kept no record of the number, nor have I been as careful in saving specimens as has Dr. Baldwin. We are under obligations to him for this paper.

Dr. A. Goldspohn, of Chicago.—I quite agree with Dr. Baldwin that if general practitioners are only fairly intelligent in regard to the relatively frequent occurrence of extrauterine pregnancy, the diagnosis can be made positively now and then, and with great probability very frequently. So far as my memory serves me at this moment I have made a positive diagnosis of extrauterine pregnancy and operated before rupture five times, may be more. I have made probable diagnoses in at least a dozen other cases that were confirmed by operation. Of course, we all have a larger number of cases where we say it is *probable* that this or that is a case of ectopic pregnancy.

The symptoms that have served me best have been largely those mentioned by Dr. Baldwin: usually presence of a period of sterility of several years after some previous childbirth, but there are exceptions to the rule. The beginning of the menstrual flow is not too early or too late in many cases, but more frequently continues as a dribbling or as a severer flow indefinitely. The pain in most cases is not of the typical colicky nature of tubal contractions, but it is more intense in the pelvis than elsewhere in the body, where it may also appear as referred or reflex pain. Several cases in which I made a positive previous diagnosis had the typical colicky pains. Then the absence of opportunity for infection as shown by the clinical history. Most of the cases I have diagnosed positively beforehand as cases of extrauterine pregnancy have been patients of mine for a longer time. I had seen them off and on for one thing and another in their pelvic sphere for several years, and they came to me in the beginning of the attack. So we have patients, all of us, concerning whom, from our knowledge of their personal conditions and domestic relations, we are quite assured that infection is not present, and has not been. Then we have the local physical signs that have been stated—enlargement, probably in the tube that pulsates at the side or back of the uterus, associated with acute sensitiveness. This, but not the volume of the swelling, may become diminished by continued recumbent posture and the usual conditions favorable for absorption of inflammatory foci.

Dr. J. Henry Carstens, of Detroit, Mich.—I wish to refer to one or two points in connection with this paper. In the first place I do not believe extrauterine pregnancy is very common. Take the ordinary general practitioner with a good practice, and how many cases of extrauterine pregnancy does he find in the course of a lifetime? They are, certainly, very few. We, who see these cases and study them carefully, are continually mistaken in our diagnoses. We are continually finding ectopic pregnancy when we do not expect it, and we very seldom find it when we really do expect it. We find something else. A little while ago I operated on a woman for appendicitis. It was a clear case. The woman had an elevated temperature, but she had an extrauterine pregnancy. I found a well-marked tumor in the region of the appendix. When I cut down, before I opened the peritoneum and examined it, I saw that it was a case of extrauterine pregnancy, with the tube attached to the anterior abdominal wall. I could not make the diagnosis before opening the abdomen. I had a similar case in which I operated for a tumor, and it proved to be an extrauterine pregnancy. These cases show that we have great difficulty in making a diagnosis. We do not see these cases early. Of course, we can urge the general practitioner to be on the lookout for these cases, but I do not think he is to blame if he cannot make a diagnosis. If we have a case of extrauterine pregnancy of say two weeks and a half duration and the woman does not have symptoms sufficiently marked to prompt her to go to a doctor, how can he make the diagnosis? If she runs over her time then the practitioner should be urged to be on the lookout for extrauterine pregnancy. When a woman runs over her time for a few days or a week and comes to us and wants to know whether she is pregnant, or comes to the general practitioner, then is the time he should insist upon making an examination, and if he finds a tumor that is soft, yielding, or fluctuating, he has good reason to suspect that it is extrauterine pregnancy.

Dr. Baldwin (closing the discussion).—My paper was pretty well boiled down, and when the Fellows come to read it they will find that if they had read it beforehand they would not have discussed some of its points in the manner in which they have. I do not claim to have brought before you anything new. I do not claim that there are any pathognomonic symptoms of ectopic pregnancy. It was my aim to call the attention of the general practitioner primarily to certain groupings of symptoms which should lead him to suspect ectopic pregnancy and to make an examination, and if he found such a condition of affairs as to justify him in calling in a surgeon to confirm the diagnosis, or the reverse, he should do so, and the case should be

subjected to operation or not as the indications might direct. It is begging the question to say that these are cases of ruptured tubal pregnancy. There may be a rupture microscopically, but not a surgical rupture where there has been no giving way of the tube. One of the cases was that of a woman who had menstruated normally two and a half weeks before, the case being purely one of distention of the tube with pain. Many of you have doubtless read the classical work of Hilton on *Rest and Pain*, in which he devotes much time to this point of tension. Whenever a tube is distended it causes pain. Every writer on the subject states that rupture usually takes place between the sixth and eighth week, but never goes beyond three months.

That is what we call surgical rupture. There may be a giving way before this time of the mucous membrane, but there is no rupture in a surgical sense. In the eleven cases reported the diagnosis and the operation were both made before surgical rupture. That point has been brought out by Dr. Gilliam. Dr. Goldspohn reports several cases in which he made a diagnosis of ectopic pregnancy before rupture. I find similar cases reported all over the world.

The principal point of the paper is to call the attention of the general practitioner to this state of affairs. He may not have more than one of these cases in a lifetime, or he may have two or three, but if his attention is directed to the fact that a diagnosis can be made in a large proportion of cases he will be enabled to recognize at least some of these cases before it is too late to deal with them successfully. In two of the cases reported by me general practitioners had made a presumptive diagnosis, and I was called in consultation with that idea in mind. About two months ago a physician telephoned me that he thought he had a case of tubal pregnancy. The patient had no fever and denied that she had had any inflammatory trouble, but that all her symptoms dated back for about one month. Her pain was quite characteristic, and yet when I was going over my notes with her the second time she admitted that the physician who attended her the month before reported that she had a temperature of 103.5°. I at once changed my diagnosis to pelvic abscess, operated a day or two later, and found my diagnosis correct. Without this febrile disturbance, however, the irregularity of her menstruation, the character of the pain, the dribbling of blood, all pointed to ectopic gestation. It was the history of inflammatory trouble which changed my diagnosis. This point has been brought out by one of the speakers.

What I desire is to get the attention of general practitioners directed to this subject so that they will have their suspicions aroused. We have been trying for years to induce the general practitioner to ex-

amine middle-aged female patients coming to him with irregular hemorrhage for cancer of the uterus, but too many of them fail to make this examination, but persist in saying that the symptoms are due to change of life, and then when these same patients consult us later on we find a cancerous mass perhaps filling the whole pelvis and send them away as inoperable. Ten years ago Mr. Tait said that the diagnosis in these cases could not be made before rupture. I say it can be made, and I think all of you will agree with me.

A CONTRIBUTION TO THE SURGICAL TREATMENT OF UTERINE DISPLACEMENTS.

By CHARLES A. L. REED, M.D.,
CINCINNATI.

THIS paper is not intended to be a general discussion of the surgical treatment of uterine displacements, but is offered solely for the purpose of calling attention to a couple of modifications of technique in the management of a class of cases that fortunately is becoming less and less perplexing. The distressing symptoms caused by many cases of uterine displacements, and the uniformity of their recovery after judicious surgical treatment, happily render a defence of the latter entirely unnecessary. Of the failures that yet occur, the most of them are examples of persistence of pain after the displacement has been overcome, and I state without fear of contradiction that the majority of such failures are attributable to the operation of abdominofundal fixation undertaken for the cure of retrodisplacements. You will pardon me, I am sure, if I pause long enough briefly to consider this operation.

Hysteropexy, as the procedure is generally designated by its advocates, is designed for adoption in cases of persistent retroflexion which fail to yield to simpler plans of treatment through the vagina, "and then only when the discomforts of the retroflexion are sufficient to interfere seriously with health."

The operation is done by opening the abdominal wall by a median incision, which is carried down close to the symphysis pubis; two fingers are introduced, by means of which all adhesions between the uterus and adjacent viscera are broken up; the fundus of the uterus is brought forward into a state of anteversion, when sutures are passed through the peritoneum and fascia and through the posterior surface of the fundus. These sutures may be of any material ordinarily employed; Kelly uses silver wire for this pur-

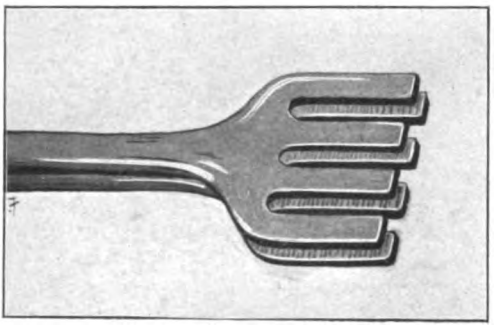
pose, and it is probably better than either silk or silkworm-gut. There is no objection, however, to the employment of catgut prepared by the formalin process. The fixation sutures are cut short and are left buried. The abdominal incision is then closed, preferably by the laminated suture. It is emphasized that fixation ought not to be effected by the anterior wall, as such a process brings too much traction upon the uterus, which shows a constant tendency to resume its former and abnormal position of retrodisplacement. The fixation by the posterior wall is enjoined because it forces the uterus into a position of pronounced anteflexion. The subsequent course of these cases varies. In the majority of them the persistent tendency of the uterus to resume its normal relation causes an adventitious ligament to form between the fundus of the uterus and the anterior abdominal wall. The ligament thus formed may vary in length from half an inch to as much as three or four inches. When it is of extreme development it gives the uterus a considerable range of mobility.

This operation is not one of universal acceptance by the profession, and there are serious reasons why it should not be adopted as a rule of practice. In the first place, it induces an abnormal position, namely, an acute flexion, for another, the pre-existing retroflexion. It is urged that this malposition is generally relieved spontaneously, but there are numerous cases in which such restriction of normal position does not occur. On the contrary, it has happened that fixation of the fundus of the uterus to the bladder has been effected by this operation. Even where the uterus does regain its normal pose it is necessarily at the expense of prolonged traction, which, in turn, gives the patient keen distress; and even after the adventitious ligament is once formed a painful condition in either the uterus or abdominal wall is induced, rendering necessary a second operation. Kelly has had occasion to perform hysterectomy for the relief of posthysteropexy pain. In the next place, patients who have submitted to direct fundofixation suffer more from visceral irritation than do patients who have submitted to ordinary abdominal operations. When, as sometimes happens, adhesions of the fundus to the bladder take place, and the anteflexion thus becomes permanent and irreducible, the dysuria becomes, in turn, a persistent and most distressing symptom. Kelly enumerates among the various

complications attributable to this operation, as done by methods inaugurated by him and now generally in vogue by those who do the operation at all, marked retraction of the scar, due to the dragging of the suspended organ; persistent hypogastric pain; marked displacement of the cervix, either posteriorly or up into the abdominal cavity, coincidently with the advance of pregnancy; a marked thinning of the uterine wall at the point of suspension; abortion or premature labor, occurring spontaneously from uterine irritation induced by the suspension; and persistent excessive nausea of a reflex character, having its origin in irritation of the uterus, due to its adventitious mechanical arrangement. It is admitted, furthermore, by Kelly that a suspended uterus is liable to carry a child beyond term, being unable to inaugurate the expulsive efforts in consequence of the weakening of the uterine wall by the results of the operation; the labor when once inaugurated is liable to be ineffective, because of the fixation of the fundus and of the consequently weakened condition of the posterior uterine segment. In the event of adhesions occurring between the anterior uterine wall and the bladder a mass is frequently formed which may offer mechanical interference with the labor. Dilatation of the cervix is impeded in consequence of its abnormal position; malpositions of the child have been observed with relatively greater frequency in patients who have submitted to this operation; and, finally, it has been observed that the uterus is liable to tear loose from its moorings during pregnancy or labor, leaving a large hematoma at the point of previous attachment. It must surely be admitted that an operation against which an indictment containing so many counts as the foregoing can be justly framed by its inventor and chief advocate is but little entitled to serious consideration by the profession.

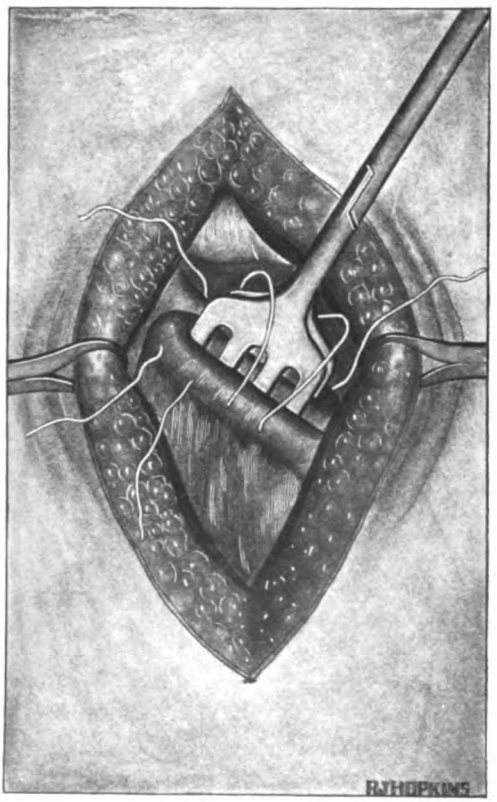
It is not my purpose to discuss the relative merits of Alexander's and Mann's operations, or to take into consideration the ingenious technique of Fergusson. I desire simply to assert the conclusion that in a majority of all cases of retrodisplacements that demand operation at all the intraperitoneal shortening of the round ligaments is the operation of choice. It has been my habit during a number of years to effect this by making a letter-of-S fold in the ligaments and stitching them, thus folded, to the parietal peritoneum along the line of Poupart's ligament. This method yielded

FIG. 1.



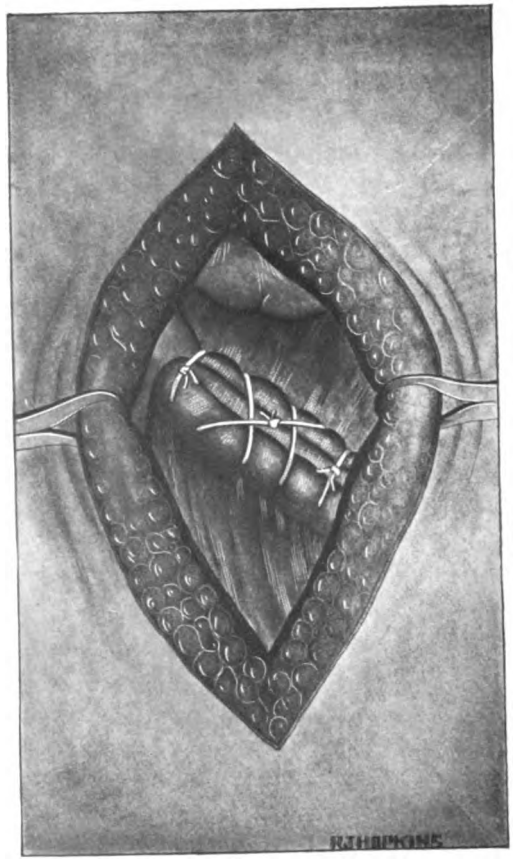
Four-pronged forceps for placing a twist in the round ligament.

FIG. 2.



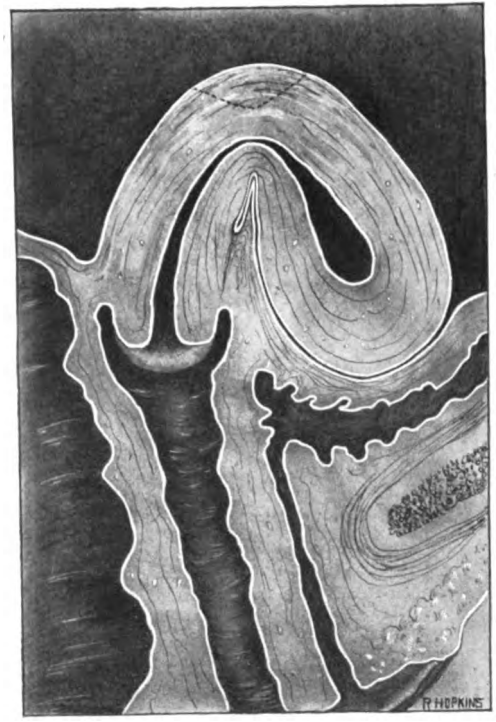
Sutures in place, loosely, in order to permit the removal of the forceps.

FIG. 3.



Sutures tied in Reed's operation for shortening the round ligament.

FIG. 4.



Anteflexion. Dotted line shows wedge of tissue to be removed.

me better results than any which I had previously tried. I have, however, become convinced that the parietal fixation of the folded ligament is not necessary for the purpose of holding the uterus in its normal position, and that the technique devised by Mann is all that is required to accomplish this object. My application of this technique differs a little, however, from that originally adopted by Mann, the modifications being those of convenience rather than of necessity. Thus, in seizing the round ligament with hemostatic forceps for the purpose of folding it upon itself the tissues are frequently wounded. The same accident is more liable to happen when volsellæ are used. While the accident is not a serious one it is certainly not desirable. Then, too, the use of two hemostatic forceps for the purpose of effecting the fold makes the services of two hands of an assistant necessary. To obviate these objections, which, though of minor importance, are still objections, I have devised a forceps with four flat approximating prongs, the whole being an inch across (Fig. 1). The prongs of the opposing blades approximate with sufficient force to hold the ligament, but not enough to induce tissue necrosis, while when approximated they are far enough apart to permit the passage of a medium-sized needle between them (Fig. 2). The ligament, brought up into the field of operation on the finger, is seized in its middle third by this instrument, which is then turned half-around, thus effecting by a simple twist of the wrist the desired shortening of the ligament. It is then held in this position until all of the sutures are applied (Fig. 3).[1] These are inserted as follows: One interrupted, one fixing the loop of ligament to the cornua of the uterus; a similar suture is utilized to fix the outer fold of the ligament; a continuous suture is then passed between the prongs of the fixation forceps, its ends being obliquely tied after the instrument is withdrawn.

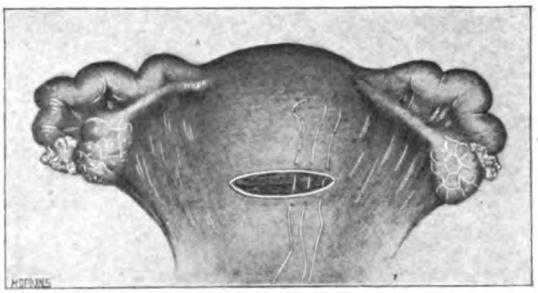
A pathologic condition that often exists in cases of long-standing flexions, and the persistence of which militates against the success of any fixation operation, consists in an atrophy of the concave wall and a hypertrophy of the convex wall at the point of flexure (Fig. 4). In many of these cases, particularly when associated with diffuse fibrosis, the elongated and hypertrophied wall offers

[1] I am indebted to Messrs. D. Appleton & Company for the privilege of using the accompanying drawings from my forthcoming "Text-book of Gynecology."

a persistent resistance to the maintenance of the normal axis of the organ. To overcome this I have for some time removed a cuneiform segment from the hypertrophied wall—an operation which Thiriar calls *cuneohysterectomie*, and which is applicable in either anterior or posterior flexions. To do this the patient is placed in the Trendelenburg position. All adhesions between the uterus and bladder, or between the uterus and other organs, are carefully broken up, and rents in the serosa that may be induced thereby being carefully stitched. The uterus is then brought toward the incision by gentle but firm traction, and an ellipse of tissue about 1 cm. wide, and having a length corresponding to the breadth of the organ, is removed from the convex side at the site of flexure (Fig. 5). Care must be taken not to carry this dissection into the cavity of the uterus, nor to wound either the circular artery or the anastomosing branches of the uterine arteries. Should the latter accident occur it is best controlled by *en masse* ligatures passed deeply into the uterine tissue at either end of the yet gaping ellipse. Retraction of the vessels generally prevents their isolation and closure by direct ligature, which, when practicable, is always the preferable method. After all hemorrhage, except mere capillary oozing, is controlled, the margins of the ellipse should be carefully approximated and closed by a continuous animal suture passed deep into the matrix. It may be well to fortify the continuous suture with two or three interrupted ones of the same material. The uterus is then dropped back, and, after pausing a moment to make sure of complete hemostasis, the abdomen is closed without drainage.

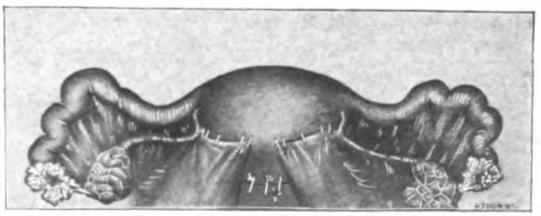
A further modification of this operation that I have practised with satisfaction in anteflexion, consists in stitching a reef of the posterior folds of the broad ligament to either side of the posterior surface of the uterus (Fig. 6). I have been able by these combined methods to relieve the most distressing and persistent symptoms, vesical, uterine, ovarian, and neurotic, due to otherwise intractable anteflexion of the womb.

FIG. 5.



Anteflexion. Wedge removed, and three sutures in place.

FIG. 6.



Showing broad ligament stitched to posterior surface of uterus.

DISCUSSION.

DR. A. GOLDSPOHN, of Chicago.—Mr. President: I am very glad to see that I, who raised one of the first voices against this pathologic surgery which is condemned in Dr. Reed's paper, am being re-enforced by a voice so eloquent and so much superior than mine as is that of Dr. Reed. The nearness of the end of that kind of surgery I feel is assured. He but analyzed the details of one of the four points that I brought forth against this kind of surgery at Columbus last year, and you will permit me to repeat them.

In the first place, fixation operations are entirely contrary to anatomy and physiology. There is no parallelism that can exist between the objects of the operation and the objects of anatomy and physiology. If the fixation operation—I do not care whether it be done through the abdominal wall or through the vagina—be made in such a way that it will be innocent in case of future pregnancy and labor, the operation will do no good beyond that labor. On the other hand, if the fixation is made in such a way that it will hold beyond labor at term, we will get correspondingly great and serious complications in labor. This general fact has been abundantly demonstrated.

As to the formation of these artificial ligaments as they are called: In all surgical procedures we are unable to control asepsis absolutely; we have more or less infection wherever we go. We cannot work on any other supposition. While the patients quite uniformly make a smooth recovery, we nevertheless have slight infections always that are generally overcome by the vital forces of the living tissues. But the round-cell infiltration which this means, results in a connective tissue hyperplasia beyond that which the operator had any intention of exciting, and a much larger structure is developed than he intended, in consequence of germs and in consequence of sutures as foreign bodies. On the other hand, the use of sutures and the dependence upon adhesions mean that we are not certain that we will get as much of a band as we intended to construct. The sutures interfere with the circulation of the part, or they cut out, and the band, intended to become two centimeters broad or long, may turn out to be only half as strong.

As to the danger of ileus—of which there are now at least nine authentic cases on record—why it should not occur, it is impossible for Dr. Howard Kelly or anyone else to contend, when they set such traps for it as he himself has illustrated in the *American Journal of the Medical Sciences*, where he reports a case in which he did a hysterectomy after having done previously a ventrosuspension.

Finally, these abnormal surgical procedures are anything but comfortable to the patient. It means traction on peritoneal structures, and if the patient is intelligent and understands the possibility of the occurrence of ileus, etc., there will be a mental pain connected with it; she will wish the work undone. If the physician were to honestly represent to the patient the possibilities following the operation, she will certainly shun it.

Vaginal fixation of the uterus in fruitful women has been condemned already. No one who is fairly up with the times in gynecology does a vaginal fixation for the purpose of holding the uterus in position, except in positively sterile cases. I welcome those attempts that take the round ligaments, as the objects to deal with, as natural means to a physiologic end or result. As to the method of Dr. Reed, however, which favors the intra-abdominal shortening of the round ligaments, I have had experience that condemns it. Shorten the ligament thus as best you can, you leave the point where it enters the abdominal wall just as weak as ever, and it can pull out. You need to do something more than double up the strong part of the ligament, the intra-abdominal portion. In conjunction with median ventral celiotomy, for other reasons, I have done intra-abdominal shortening of the round ligaments very often and for a long time; but in every case of subsequent labor the retroversion recurred as far as known to me. In two of those instances I have done my round ligament inguinal operation afterward, and feared I might find difficulty in liberating the round ligaments owing to the former construction of loops and reduplications in them; but there was no trace of any former interference with them.

Dr. D. Tod Gilliam, of Columbus, Ohio.—I have very little to offer in addition to what has been said by the essayist and by Dr. Goldspohn. I am very glad to see this disposition on the part of our most progressive gynecologists, to utilize the round ligaments in bringing the uterus forward and sustaining it in its normal position. I stated yesterday that I thought the Kelly operation had its sphere of usefulness, and that occasionally I resorted to it. I do not, however, use the Kelly method as given by Dr. Reed in his paper. I do not pass my sutures through the posterior wall of the uterus. I did some time ago, in conformity to Kelly's instructions, but have abandoned that for some time. I now introduce my sutures nearer the fundus. I only include the peritoneum in my parietal stitches. I have had less distressing symptoms after this operation than probably many gentlemen have credited it with. I will not dwell on that subject, because I spoke of it in my paper. I find some objection to Dr.

Reed's method of shortening the round ligaments. It is an ingenious operation as well as the instrument for doing it. The operation is apparently easy of execution, and the only objection I have to it is probably a theoretical one—one which has been raised against all of these intraperitoneal folding of the ligaments—and while I have had no observations to confirm that which has been asserted by Dr. Goldspohn, that the ligaments will pull out, yet I have been afraid of the tender and weak distal extremity of the ligament not being sufficient to hold the parts, even if the infolding of the ligament were permanent in its effect. This objection may be purely theoretical, and may not have any basis in fact. However, I welcome Dr. Reed's method as being very simple and efficient in restoring the uterus to its normal position, and I hope it may prove to be permanent in its effects (facetiously). I am glad to see that he is approaching nearer to the only ideal method of holding the uterus forward, and that is the one which I gave you yesterday. I believe it will be the ideal method of the future, and that Dr. Reed, Dr. Goldspohn, and others will adopt it in time.

Dr. J. Henry Carstens, of Detroit, Mich.—To a great extent we went over this ground yesterday. Why do we have this hypertrophy and why do we have this atrophy of the uterus? It is the pressure and constant pulling on the other side that develop that part of the uterus. The principal point about it is this, What kind of cases are they? Are they simple, plain, and uncomplicated? It seems to me we have not gone back to the original source of the trouble. Yesterday and today we have been talking about the surgical side, pure and simple, of these cases. You will remember that I called attention yesterday to the fact that a great many of these cases do not require any operation, and that many of them can be treated successfully by the general practitioner. If I am called to see a case something like the one reported by Dr. Reed, I do not open the abdomen and make a ventrofixation, an Alexander operation, or shorten the round ligaments. I treat such a patient with other means first, if they have not been tried. In a plain, uncomplicated case with hypertrophy, if you straighten the uterus by applying a stem pessary and retroversion pessary, and keep it in normal position, the hypertrophy on one side will diminish as well as the atrophy, and probably by keeping in a pessary of that kind the patient will be entirely cured. If we have to resort to surgical measures of treatment there is no doubt but that the operation described by Dr. Reed is a good one, namely, taking out a wedge-shaped piece in the manner he has described. I claim that we should try other measures of treatment before

we decide to open the abdomen to make any kind of surgical operation. In some cases it may be necessary to remove the ovaries and tubes when we shorten the round ligament, and by that means we can keep the uterus in a normal position.

One other point: A great many of these cases have a general abdominal ptosis. It is not only the uterus, but the intestine, stomach, and liver that are jammed in the pelvis. You may make any form of fixation in such a case as this, and you cannot keep the uterus in place, because the other organs are bound to shove it down.

Dr. Charles Greene Cumston, of Boston.—I have been much interested in Dr. Reed's excellent paper. I would like to say one or two words relative to cuneiform section of the uterus, which I believe was devised by Jonnesco, of Budapesth. I read his original memoir when it appeared, and ventured to do the operation twice. The patients were both young unmarried women, who suffered from both retroversion and marked retroflexion of the uterus. I did not open the abdomen, but performed cuneiform resection through the vagina, drew the uterus well down, and made an anterior colpotomy. The operation was not difficult in these two cases, but comparatively easy. In operating upon these cases I did not think it necessary to shorten the round ligaments, and I did not do it. The operation was indicated for painful menstruation due to flexion, and in both cases the patients have done remarkably well. One dates back seven months, and the other about three and a half months.

The only modification in the technique of the cuneiform resection that I made was, that I cut down a good deal deeper into the muscular tissue than is represented in the plates of Dr. Reed. I cut down so deeply that I nearly touched the mucous membrane. Another thing that Jonnesco recommends in doing this operation is to make two flaps of peritoneum, and then a row of buried sutures is inserted, and then the peritoneum is brought over the wound and sutured.

I cannot agree with Dr. Carstens regarding the treatment of these cases. No matter what the operation for the correction of the version may be, whether it be shortening the round ligament, ventrofixation, or what not, if we have a case of flexion of the uterus in a young woman we will not correct it no matter how firmly the uterus may be anteverted after the operation; we must correct the flexion, and this can be done very nicely by cuneiform resection of the uterus. I think the operation has a future in a *limited* number of cases. In the case of a young woman, whose ovaries are healthy, where the dysmenorrhea is entirely uterine, we relieve the congested condition of the endometrium which is produced by the flexion on account of stasis.

That naturally takes place in a bent organ. The circulation is interfered with; you remove the obstructing point of stasis, and the endometritis will certainly improve—that is, in women who have endometritis due to flexion. For that reason I think the Jonnesco operation of cuneiform resection is the proper thing to do. It can be done easily through the vagina.

DR. A. VANDER VEER, of Albany, N. Y.—Anything bearing upon this subject, and particularly when presented so clearly as Dr. Reed has presented it, is of great value to us. I remember the very first volume of Sims' *Uterine Surgery* that came through my bookseller to Albany, and which I studied with a great deal of benefit at the time. Books accumulate. I never part with them, but I have a store-room upstairs, and when we clean out and put in new books and catalogue them the old ones are taken upstairs. Sims' *Surgery* went upstairs some time ago. Speaking of pessaries in the treatment of retroversions of the uterus, while these pessaries have not gone upstairs, they have been put into drawers the same as some instruments which we think very little about. We come back to the time of opening the abdomen and doing our work, as we believe, with entire safety and freedom from any anxiety of mind. After doing an operation I have said to myself, We are just where we want to be in regard to retroversion of the uterus. We will fix the uterus in front as we do any surgical operation, or as any general surgeon would say, and have control of the case and do what is the right thing. Of all my work inside the abdomen ventrofixation has brought me more disappointments than any other one operation. Dr. Macdonald, having a turn of mind for good surgery, has followed the various methods in order to be successful in his work. I have followed the different methods from time to time, and the objections made to them, as presented by some of the preceding speakers, hold good in my cases. It is fair to assume that Dr. A. or Dr. B. in such a city who does this operation can do it just as well as anyone can. And these cases come to us in which an Alexander operation has been done by some good man, whom we know to be an expert operator and in whom we have great confidence, and the patient says to you a year afterward, when she comes to you for treatment, that she feels just as bad as she did before the operation. Wherein lies the fault? You examine the patient carefully; you find there are cicatrices of the Alexander operation. You make a vaginal examination and perhaps find that the fundus of the uterus is in the pelvis. The operation may have been done well. I happened to come across several such cases in the early history of the Alexander operation. I was present when

this method was up for discussion before the British Gynecological Society, and in that debate great doubts were expressed by some as to whether it would be a success. From my own experience and what observations I have made regarding it, I think I shall have to send the text-book which gives this operation in detail upstairs, not to be consulted as regards the good that is to result from it as a permanent operation.

The more positive method of ventrofixation which I have followed, and which, within the last two or three years I have modified somewhat, I will briefly mention. After making an abdominal incision and bringing the fundus well up, I have put in sutures on each side through the fascia of the muscle, then through the uterus near up to the fundus in order to make a broad surface on each side, not through the anterior wall of the uterus as I formerly did, not going through the posterior wall, because I saw one of Kelly's operations in which the symptoms of ileus were imminent at times, and that this operation brought about complications as quickly as any. I put in the sutures on each side, leave them as buried sutures, then close the incision, and I have reason to believe that I am shutting off the anterior wall in such a way that there can be no little opening for the intestine to get in. An adventitious form of ligament will form after a time, and it stretches, and, like some of the other cases I have had, these patients would return two or three years afterward where it was not entirely satisfactory.

Dr. Reed has presented a point here that will be of value. To sum up my experience and belief in the proper operation: I believe this one is of the greatest value, particularly in connection with such a simple form of instrument as he presents.

Dr. Carstens is right in what he has said. My treatment of a case of simple retroversion of the uterus in a young lady, or married woman who has had but one child, is to correct the endometritis, if it exists, and I still have my patients wear intrauterine silver pessaries for some time. After cureting the endometritis, I have my patients wear a silver uterine pessary for two or three months. I instruct them to use the knee-chest position faithfully and to observe general hygienic conditions, riding a bicycle, etc. I instruct patients to go out as much as possible into the open air and to ride bicycles. In this way they get general muscular exercise. I must say I have had good results and feel that my patients have been greatly benefited by this line of treatment. After the menopause, in a case of retroversion with prolapsus, when the patient suffers so much, when there is prolapsus of the uterus, and she has reached the age of fifty-five or sixty, I do

not hesitate to place before her the operation of vaginal hysterectomy, which I do in many of these cases very satisfactorily, and the results are permanent.

DR. REED (closing the discussion).—I wish to express my appreciation of the interest manifested in my contribution, which I feel is disproportionate to the importance of the subject which I have presented. There were two points in particular which attracted my attention. First, as to the infolding of the S in the shortening of the round ligaments, done by the intra-abdominal method during pregnancy. I have not encountered that. I have not heard of a report of such an occurrence until I heard the statement from Dr. Goldspohn, which I do not dispute. But certainly it must be looked upon as a very rare occurrence. At any rate, even if it does infold, in these cases, during the time before it does infold the uterus has acquired the habit, so to speak, of staying at home.

The point made by Dr. Goldspohn that in this operation reliance is placed upon the redundant power of the thin and attenuated portion of the ligament—that is, the parietal extremity of the ligament—is not entirely accurate. While we are speaking of shortening the round ligaments, we all know very well in effecting that we take a fold of the broad ligament with it and fold it upon itself; in this way we shorten not only the round ligament, but the anterior fold of the broad ligament. There we acquire a considerable amount of additional strength. Dr. Goldspohn will recall with perfect clearness the captivating remarks of Alexander himself at the Amsterdam Congress relative to the Alexander operation. I do not recall an instance of more superb scientific points than were displayed by Alexander upon that occasion. His operation had been subjected to adverse criticism, and it had been subjected also to very pronounced eulogy at the hands of our own distinguished confrère. When Alexander took the stand and called attention in plain language to the so-called Alexander operation, he said that it was devised at a time when opening of the peritoneal cavity was a much more serious procedure than at present. But with improved technique, and the immunity with which the peritoneum can now be dealt with, much of the danger of the operation had passed away. He called attention to the fact that it was not an operation of choice in cases of adhesion, and that those cases were to be excluded. He likewise called attention to the fact that it was not to be undertaken in extensive inflammatory diseases of the appendages, and he mentioned with perfect frankness his inability to diagnosticate many of these insidious cases of disease of the uterine appendages, leaving the whole matter in doubt as to just when we should use it, except

in those cases in which the uterus is easily brought back into position in which the appendages are free from inflammatory diseases, and in which shortening of the ligaments will answer every purpose—a point which we will all concede.

I insist upon the intra-abdominal operation, as it places under my control, as no other operation will do, all possible complications.

Dr. Carstens spoke of the importance of subjecting patients to preliminary treatment of a more conservative kind. I am sure that none of us would think of operating upon these cases as a preliminary measure until after we had ascertained that the uterus was not reducible, that there existed adhesions, or that there existed those hyperplastic changes to which I have called attention, and which would interfere with the sustained position of the organ. But I must say with reference to these preliminary methods that I have not only placed the instruments in the lower drawer, but have carried the drawer down into the cellar. If a pessary is adjusted in such a way that it will hold the uterus in its replaced position, it must exercise sufficient force to accomplish that purpose, or it will act as a foreign body. I look upon pessaries as foreign bodies, and I treat them from that stand-point. The fact that enteroptosis is a frequent causative factor in these cases cannot be denied, and that condition certainly furnishes the most intractable cases, which are simply cases of hernia through the pelvic diaphragm, and their reposition may be temporarily effected, but in the presence of a persistent cause liability to recurrence is to be counted upon.

I am glad that Dr. Cumston has corrected me, if I am wrong, in regard to the operation of cuneiform hysterectomy. I knew that Jonnesco had done the operation, but in a recent work the operation is credited to Thiriar. If I am wrong I shall revise my article in accordance with the information that has been furnished, for I do not wish to do any surgeon an injustice.

The vaginal route is one which undoubtedly could be utilized. I can understand how it can be done in the presence of small uteri, with anterior displacements, without much difficulty by anterior colpotomy, and it can be accomplished with great facility by those who are in the habit of doing vaginal operations.

I do not understand exactly what Dr. Vander Veer means by the intrauterine stem pessary. It is certainly not applied immediately after abortions. I know the intrauterine stem has been utilized for the purpose of holding the uterus until pathologic changes have disappeared; but I shall look upon it with a good deal of apprehension. We all know that elements of infection abide persistently about the

vulva and introitus vaginæ. We know, too, that if it were not for Dœderlein's bacillus being on guard in the vagina we should have infection of the uterus constantly. We know, even in spite of the defensive action of this particular bacillus, that the uterine canal is frequently infected, and I would certainly look with apprehension upon any intrauterine stem pessary that is employed which permits the entrance of pathogenic elements from the vagina into the uterus. I would hesitate to permit a patient with an intrauterine stem pessary to go bicycle riding. It seems to me the mechanic conditions would not be conducive to the safety of the uterus, but these are theoretic criticisms, and when Dr. Vander Veer says that his results have been satisfactory in this class of cases that ends it.

FIBROMA OF THE OVARY.

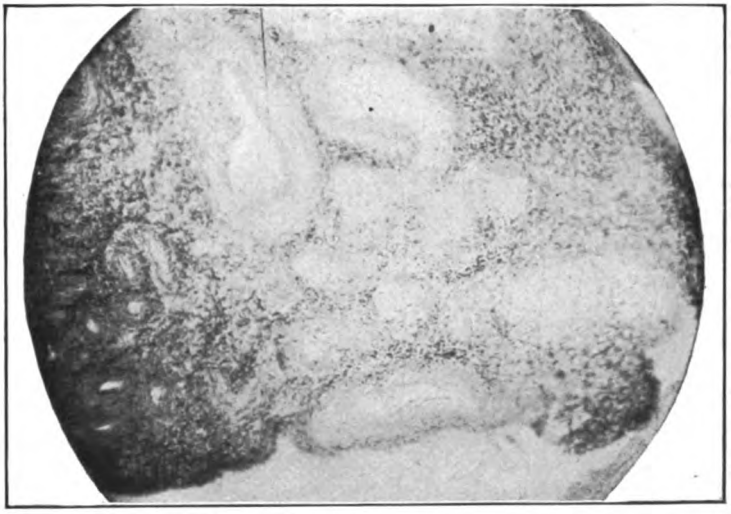
By L. H. LAIDLEY, M.D.,
ST. LOUIS.

Fibroma of the ovary[1] is among the rarest of the pelvic tumors, and is characterized by a multiplication of connective tissue elements of the ovary at the expense of all other histologic constituents, the entire organ being involved, becoming converted into a fibrous ovary, which may rarely contain degenerative cysts or dilated blood and lymph spaces. Alban Doran reported among the first this form of disease involving one ovary, while Cullingworth reported two in the same pelvis. Leopold reported fifty-nine cases, but nineteen are examples of true fibromata, and he infers that some of these were sarcomata. Coe collected more than twenty authentic cases in addition. Kelly reports in twelve hundred abdominal sections four cases, while Löhlein found seven in one hundred and seventy-two cases of ovarian tumors. Twice they were bilateral. It is hard to give a correct statistical statement of their occurrence, for such a statement should be based only on cases examined microscopically by competent observers using modern methods.

Usually they are small in size, while some have been observed to weigh as much as twenty pounds, as was recently reported by Fleishman, of Vienna. They are described as densely hard, pinkish or white in color, covered with smooth peritoneum; the fibrous growth is never disposed, like a uterine fibroid, in a bed from which it can be shelled out. In their development they do not form circumscribed new growths, but seem rather to be a kind of fibrous degeneration of the ovary, which is so uniformly hypertrophied that its shape and relations are not altered. Leopold points to the fact that the tubes remain free, instead of a part of the tumor,

[1] Kelly.

FIG. 1.



Portion of cortical layer, with hyaline degeneration of walls of arteries.

as in cysts. Rokitansky describes an interesting form of this disease derived from the corpora lutea in the development of ovarian fibromata. They are usually hollowed out into little "geodes" containing fluid. It is difficult to decide whether these cavities come from the Graafian follicles, from limited points of molecular disintegration, or from the dilatation of lymphatics, the latter of which is probably the true theory. The structure of these tumors is chiefly fibromatous in the true sense of the word. There are many connective tissue fibers and few or no unstriped muscular fibers. If so, a misconception of the origin of the neoplasm has been advanced.

The cause of this form of tumor is not well understood. Some authorities claim that it is the result of inflammation. If that were true a greater number would be observed. The diagnosis of fibromata of the ovary is difficult, being confounded with uterine fibroid with a long pedicle. When an unusual hardness with ascites is found such may be suspected, but an exploratory incision is required to decide the question, and even then it is safe to conclude that all tumors may be malignant until the microscope has determined the true nature of the disease.

The following is probably the true pathology of fibromata of the ovary:[1]

1. Fibrous tumors may and do arise from the ovary, independent of the uterus or the other adnexa.

2. In structure these tumors are true fibromata, yet peculiarly rich in long spindle cells which closely resemble those of the normal stroma; hence,

3. These fibromata originate, not by a local change, but as the result of a general hyperplasia of the ovarian stroma. Moreover, there is nothing to show that this process is of an irritative or inflammatory character.

4. Cystofibromata of the ovary, like those of the uterus, are of secondary formation, and result from changes in previously solid tumors.

5. The majority of these cysts probably arise from the so-called "geodes" or "gelatinous patches."

6. These "geodes" do not represent any form of degeneration

[1] Coe.

at all, but are dilated connective tissue spaces filled with a coagulable serous fluid resembling lymph.

7. The "geodes" are probably dilated lymph spaces, which expand by reason of the accumulated fluid in their interiors—a condition due to a general stasis.

8. Simultaneously with the lymph stasis there often exists a disturbance of the blood circulation, giving rise to edema, extravasation, and various local changes, but these are factors in the subsequent growth, not in the origin of a "geode."

9. Commencing cysts grow by increase of the contained lymph, and by accessions of blood and serum from adjacent vessels, and by degeneration of the surrounding tissue.

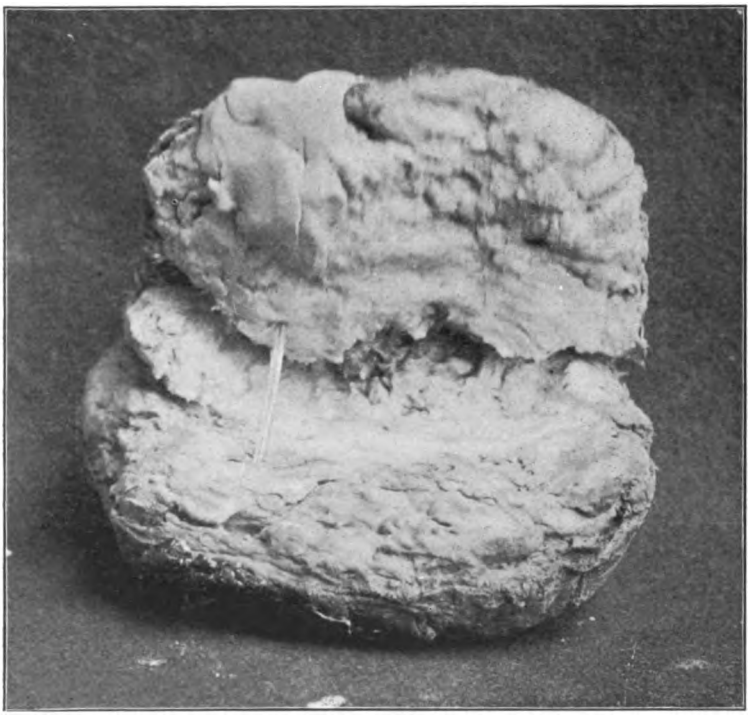
10. The fluid found in these cavities has originally the properties of lymph, but becomes so changed by intermixture with other elements that its examination for clinical purposes does not furnish positive results.

11. The *ultima causa* of dilatation of the lymph channels and consequent cyst formation in fibroid tumors is unknown. Clinical observations lead to the inference that in many cases the active influences are within the growth itself.

I may be pardoned for presenting to you a short history of this rare form of neoplasm in connection with the report of the specimen I now present to you, as follows:

Mrs. H., aged twenty-nine years, married, usually enjoyed good health—with the exception of almost complete deafness, due to a specific disease for which she was treated some fifteen years ago—became pregnant, and was delivered of a healthy child about two months before the removal of the tumor. She had noticed a tumor in the region of the left ovary about two years ago, hard and slightly movable, which continued to grow to the size of two fists. In the development of pregnancy it was pressed upward on a line with the umbilicus and could readily be felt in her left side. There was no pain or discomfort from its presence up to the tenth day after her delivery. She had a favorable "getting up," when on the fifteenth day she had fever with pains, causing her to again take to her bed. This continued until I saw her two months later. Upon examination I found the lungs, heart, and abdominal viscera in normal condition. There could readily be felt and seen a hard, immovable tumor in the left umbilical region, with considerable

FIG. 2.



Diffuse fibroma of the ovary.

ascitic fluid in the cavity. On January 20th an abdominal section was made, revealing a solid tumor adherent to the anterior wall of the abdomen, which was detached. Posteriorly the folds of the bowel were adherent to that portion, which was also dissected off, freeing the tumor, kidney-shaped and hard, with short pedicle, one inch in diameter by two inches in length, which was ligated and the tumor removed. In tying the ligature it readily cut through its peritoneal covering, but secured the stump from hemorrhage. Upon examining the remaining organs the stump of the pedicle occupied the location of the ovary; the tube remained distinct and separate from the tumor; the opposite side showed a healthy tube and ovary; there was considerable hemorrhage from the surface, bleeding following the operation, but with that exception there was no difficulty encountered. The patient made an uninterrupted recovery.

The following is a description of the tumor: weight, 32 ounces; measurement, 6 x 5 x 3 inches. The following is a histologic report: The tumor is of ovarian origin, as shown by remnants of the cortical zone, with distorted and compressed follicles and corpora lutea. It consists almost entirely of a mass of thick, fibrous tissue, with comparatively few connective cells. The intercellular fibrillar substance is very massive and has in many places undergone hyaline change. In other places edematous infiltration has taken place, with a swelling of the cell bodies, giving the tissue a myxomatous appearance. There are larger and smaller areas of round-cell infiltration, the lymph spaces and channels around these areas being widened; the cells of their endothelial lining are seen in a state of proliferation, forming now and then groups reminding the observer of endotheliomatous changes. Larger and smaller portions of the tumor have broken down, showing foci of detritus with agglomeration of polynuclear leucocytes. In many places, in this way, cyst-like cavities filled with leucocytes are formed. No bacteria were found in them.

In a number of sections larger and smaller groups of medium-sized round cells, with comparatively large nuclei, are found, frequently arranged around bloodvessels, which give the appearance of foci of sarcomatous degeneration. The nature of the nuclei, however, as well as the absence of any mitoses, leave it doubtful whether we have to deal here with sarcomatous structures.

The interior of the tumor is poor in its supply of vascular structures, which are a little more plentiful at the periphery.

From these data it is apparent that the tumor is a fibroma with a series of degenerative changes all through its mass.

The form of the tumor recalls to some degree the shape of the ovarium, the indentation in its kidney-shaped outline most likely corresponding to the hilus. It must, therefore, be called a *fibroma ovarii diffusum.*

DISCUSSION.

Dr. James F. Baldwin, of Columbus, Ohio.—Mr. President: I was very much interested in the report of Dr. Laidley's case, and I think I shall be more interested when I have an opportunity of reading it at my leisure. I have had three cases of fibroma of the ovary. In one case the specimen was three or four times the size of the one presented by Dr. Laidley. It had a long pedicle and the uterus was perfectly normal. The tumor presented microscopically no signs of ovarian tissue or of malignancy. Its removal was, of course, easy, and the woman has been in perfect health since. The first case in order of time had a fibroid about the size of a walnut. The woman suffered very greatly from pain in this tumor, but I delayed operating for several months, because the amount of urine was very small, its specific gravity low, and the amount of albumin considerable. Finally, however, her condition became such from pain that it was necessary to run the risk of the diseased kidneys. The operation was a very simple one, as there were no adhesions. I sent the specimen to the late Dr. James E. Reeves, of Chattanooga, who reported that it was a pure fibroid, and further stated that it was the hardest tissue of the kind that he had ever cut. He valued the specimen so highly that he kept it. The patient made a complete recovery, the urine promptly becoming normal and remaining so.

The last case that I saw was six months ago. The tumor was about half the size of the one presented today. It was somewhat elongated and excessively hard at one end. At the other end, however, there seemed abundant evidence of normal ovarian tissue. The specimen is still in the hands of the pathologist for examination.

Ordinarily, of course, we expect to find solid tumors of the ovary malignant in character, and I doubt not all of us have had our share of these solid tumors that are usually found sarcomatous. It is

FIG. 3.

Portion of external layer. *a*. Old corpus luteum.

evident, however, that we must have a certain small percentage of fibroid tumors of the ovary that are not malignant.

Dr. E. Gustave Zinke, of Cincinnati, Ohio.—I think the specimen presented by Dr. Laidley is an exceedingly interesting one, but the occurrence of fibroid tumors of the ovary, which were denied years ago, are found not to be quite so rare as in the past. This is not only true of fibroma of the uterus, but of the broad ligaments in general. In the past—and I am speaking now of fibroma of the broad ligaments—it was explained that they originated from the uterus itself, the pedicle being severed from it, becoming a tumor by itself in the broad ligament. This theory, however, has been abandoned, because it has been very clearly demonstrated that the broad ligament contains an ample amount of muscular as well as fibrous tissue. The occurrence of fibromatous degeneration of the ovary may be explained by the fact that many of the tubules of the parovarium enter the ovary, and that they extend into the ovary very extensively in many instances.

PAPILLOMA OF THE VULVA.

With Specimens.

By EDWARD J. ILL, M.D.,
NEWARK.

The specimen presented herewith was removed from Mrs. B. She was fifty-eight years old, and came under my observation November 11, 1897. She was married, had had several children, and never had a serious illness. She had a normal menopause at fifty-one. At present she has no vaginal discharge of any kind.

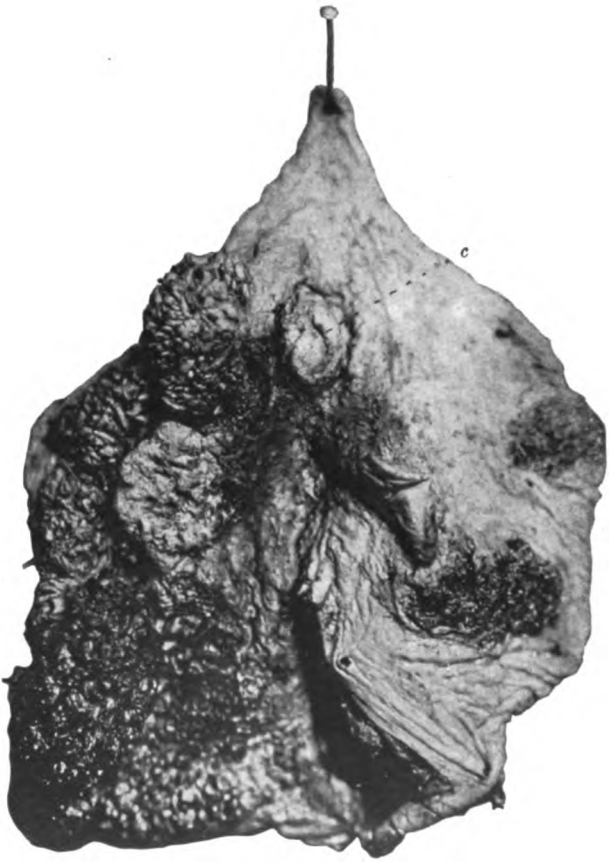
A year ago she noticed a growth about the vulva. It produced neither pain nor inconvenience at first, but lately intolerable itching. On examination it appeared that both inner surfaces of the vulva were thickened at some places, appearing horn-like, white, and smooth. At other places there were hard, heavy papillæ, which rose considerably above the surrounding tissue, and were from 3 mm. to 15 mm. in diameter at their base. The flattened surfaces were noticed more frequently on that portion of the vulva where the opposing labia produced pressure upon each other, while the elevated papilliform masses were situated at the free border.

The disease extended from the beginning of the vulva above down to the posterior commissure. It covered the whole vestibule except the tissue immediately surrounding the external meatus of the urethra, and was well defined to but stopped at the vaginal mucous membrane. The vulva, as a whole, stood out far beyond its normal elevation. The curet made no impression on the masses. The diagnosis of a diffuse non-malignant papilloma of the vulva was made at this time. The patient objected to any operation and was told to keep the parts clean with green soap and boric-acid solution.

She was to return if no better. The treatment, however, made her so comfortable that she did not return until October 4, 1899,

Diffuse Non-Malignant Papilloma of the Vulva.

From the American Journal of Obstetrics and Diseases of Women and Children, November, 1900.



Papilloma of the vulva. *c.* Clitoris.

nearly two years after the first visit. She had become tired and wanted an operation. At this time there was no material change about the parts from that described above.

She was operated upon on October 19th, when I removed the whole vulva, the labia majora and minora, the clitoris and vestibule close to the urethra and mucous membrane of the vagina. The incision was carried well into the cellular tissue all over. The healthy skin was drawn across the defect above and to th urethra and vagina below, leaving a tolerably normal-looking vulva. Six spurting vessels were ligated. At the present time there has been no report of a recurrence.

An examination of the specimen under the microscope, as kindly reported to me by Dr. F. R. Bailey, shows it to be "papillomatous in character and of a structure corresponding to that usually found in papillomata of the skin. There is a substratum of new connective tissue of varying density, as found in fibromata, and over this a thick, dense covering of epithelium having a papilliform arrangement. Some parts of the connective tissue substratum show an inflammatory reaction by the presence of more or less small round-cell infiltration."

Another case which came into the writer's hands was seen in December, 1881, with his friend and colleague, Dr. Balleray, of Paterson, N. J. This woman was forty years old and had suffered for some years. At that time Dr. Balleray removed such portions of each side of the vulva as seemed diseased, and sewed up the wound. In 1894, thirteen years after the operation, the patient came into my hands with such an extensive relapse that I removed the whole vulva. During all of these years the patient suffered much with local irritation and dyspareunia. The pathologic condition of the specimen removed by Dr. Balleray, sections of which are still in my possession, agreed with the case first described.

While papillomata of the vulva are not rare, this particular diffuse form must be of great rarity. These are the only two cases of this character that I have ever seen, and I am unable to find any description that agrees with the condition under consideration.

DISCUSSION.

DR. D. TOD GILLIAM, of Columbus, Ohio.—Mr. President: Four or five years ago I removed a papillomatous growth which involved a large portion of the vulva. No microscopic examination was made of it. I regarded it as benign in character. The patient came back to the hospital for the same trouble eight months later, at which time I removed the entire vulva. I was unfortunate in stitching the parts too far down. I united them, leaving a small vaginal opening. I did not do any special harm, but the work was not as neatly done as I would do it today. The non-recurrence of the tumor shows its benign character.

DR. A. GOLDSPOHN, of Chicago.—I would like to ask Dr. Ill whether he had any suspicions about this tumor being carcinomatous before operation.

DR. ILL.—I had no such suspicion. As I recall the second case reported, which I saw nearly twenty years ago, it was much like the one the specimen of which I showed. I have been able to follow that patient for thirteen years, and the woman presented no appearance of malignancy. The operation on my second case was done in October, 1894.

EXHIBITION OF PATHOLOGIC SPECIMENS, WITH BRIEF HISTORIES THEREOF, AND DISCUSSION ON THE SAME.

L. H. LAIDLEY, M.D.,
ST. LOUIS.

Hernia or Diverticulum of the Chorion.

Cysts of the placenta have been reported by Millet and others, supposed to have developed from the exudation of blood, forming a clot separating the chorion, usually of small size, and in some cases more than one is noted. Ercolani reported two cases; in one the entire fetal surface of the placenta was shown with round tumors covered by chorion, the largest being about the size of a cherry. Some have been opened and the chorional wall torn, showing a solid material filling the depth of the cyst; others were more solid and were filled with coagulated fibrin in which rounded masses of granular hematin could be seen.

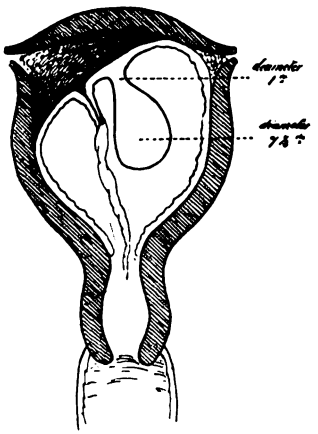
Ercolani proved that the interior wall was formed by the chorion, which covered the whole bloody mass, of which half projected above the placental surface, while half dipped into the placental tissue and lay in immediate contact with the effused blood. The term cyst is therefore inexact. At the central depth of these tumors the villosities, more fibrous than usual, formed a compact layer, certain spots in which turned out to be cells of the serotina. Small, irregular, calcareous concretions were scattered through the mass.

Bustamente describes a kind of cyst which is sometimes found upon the fetal surface of the placenta, of a regularly rounded or elongated shape, and varying in size from two-fifths of an inch to two or two and two-fifth inches. They are placed below the chorion and amnion, which form their superficial fetal boundary, being limited below by the placental tissue itself. The contents of these cysts are solid and liquid.

A. Daugan reported a case of an oval tumor, four and two-fifth inches long by three and one-fifth inches broad, and covered by the

membranes, which were partly detached from its surface. Several large venous and arterial branches of the umbilical vessels run over its surface and penetrate its substance to the center. Divided longitudinally, the tumor appears to be composed of intimately adherent lobes, some being of a dead white and others of a pale or deep rose tint. Its tissue is homogeneous.

The case which I present has the following history: Mrs. I., aged twenty-two years, was confined at the seventh month (being her second pregnancy) on August 5th. She was in labor about six hours; all that time the os was fully dilated without any pain until a few minutes before her delivery, which was normal; twenty minutes afterward a tumor-like body, seven inches in diameter was expelled, proving to be a sac containing amniotic fluid with coagulated blood.



Hernia or diverticulum of the chorion.

It was attached to the placental covering one inch to the left of the funis, making a pedicle one-half inch in diameter, made up of the chorion, bloodvessels, and connective tissue. The placenta was detached forcibly in order to preserve the sac and contents. A microscopic examination of the cyst wall shows it to contain the same anatomic structures as the chorion, fed by the same bloodvessels, producing a hernia or diverticulum of the chorion, the fetal side presenting the chorion, the inside the amnion.

The literature does not present a similar instance of this form of tumor. As to the cause of its development, I offer the following theory: Early in the pregnancy there was, because of the relaxed state of the wall of the chorion, a portion of it so twisted as to form a

new chamber, receiving its blood from the usual source, its cavity—the normal amniotic fluid, and because of its partial interference of the bloodvessels and effusion into the sac.

CHARLES GREENE CUMSTON, M.D.,
BOSTON.

Carcinoma of the Cecum.

Mr. President: I have not brought the specimen with me because the photographs show the condition just as well. The patient was one of our own profession, a woman, forty-one years of age. Two years before I saw her she fell off a bicycle and struck her right iliac fossa. After this traumatism she was never quite free from pain in that region. Her family history was quite perfect. Last winter, after having attended the theater, I believe, she had eaten some lobster salad; she came home and was taken with the ordinary symptoms of a mild attack of appendicitis. She recovered from these symptoms without any trouble, but I believe had one or two similar attacks at an interval of a few weeks after that. In March my friend and colleague, Dr. Coggshall, saw her in another attack. At this time the doctor found that she had all the ordinary symptoms of a mild attack of appendicitis. She had a slight rise in temperature; her pulse was not very rapid, and there was very little tenderness over the region of the cecum. However, the symptoms were sufficient to justify a diagnosis of appendicitis. She recovered in a day or two from this attack, was able to go out, and about a month thereafter Dr. Coggshall saw her again in another attack, and advised operation, which he performed. He found the appendix very easily. There were a few adhesions. The appendix was doubled on itself, and contained a considerable amount of mucopurulent matter. Her convalescence was uninterrupted. She had been troubled a great deal with gas in the abdomen before the operation. After the operation she was up and out at the end of two weeks. She felt very well, but after she had been around for a few days symptoms of gas in the bowel began to trouble her as before the operation, and she complained of much pain in the region of the cecum. The pain became more severe and colicky in nature, so much so that she spent part of the time in bed. Six weeks after the operation vomiting occurred immediately after meals, and Dr. Coggshall very kindly asked me to see

the patient with him. On examination we found the abdomen very much distended. There was a beautiful looking cicatrix from the operation. On deep palpation in the right iliac fossa it seemed, both to Dr. Coggshall and myself, that we could make out a mass somewhat indistinctly. As the patient did not wish to have another operation if she could avoid it, a very well-known physician saw the case in consultation with us and agreed that it was one of chronic intestinal occlusion in the region of the cecum, and due probably to adhesions contracted there after the operation for appendicitis. I must insist, once more, on the point that Dr. Coggshall found the appendix at the operation without any trouble; he drew the cecum well out and explored it. As the symptoms increased, and vomiting became more severe, the patient practically could not retain anything.

Five days after I saw the patient I operated, made an incision in the median line, and on introducing my hand into the right iliac fossa I found a mass about the size of a walnut, which was adherent to the posterior aspect of the pelvis. In order to get at this I made a transverse incision perpendicular to the median one. After difficult dissection I brought up the cecum, which was tremendously dilated, and at its junction with the ascending colon there was a very beautiful annular carcinomatous stricture.

In the section of the gut opened you will see that on account of the constriction formed by the growth there is only a small entrance into the cecum. The cecum formed a dilated sac. The patient stood the operation very poorly; anesthesia was difficult. I decided to make at the time an artificial anus in the cecum in the median line, with the hope that in three or four days or a week the general symptoms due to stercoremia would subside, and then I could do a complete resection of the cecum. Unfortunately, the patient never rallied, and died in twenty-two hours after the operation. I would say in regard to the operation of making an artificial ani in the median line in the cecum, that had the patient lived it would have been perfect. The cecum would have formed a large pouch where the fecal matter could accumulate, and it would have been expelled very readily.

In looking up the literature of carcinoma of the cecum, I was able to collect about fifty-five cases reported from various sources. In one or two instances the operators were in the same fix as I was. They had to hurry, and made an artificial anus, and in one case reported the surgeon extirpated the growth two or three days later, but his patient did not live. In looking over the statistics I find that complete resection of the cecum is the operation of choice.

Regarding the symptomatology of carcinoma of the cecum, it is very vague indeed. In most of the cases reported vomiting *immediately after taking any food* was a prominent symptom.

RUFUS B. HALL, M.D.,
CINCINNATI.

Ovarian Cyst Complicated by Retroperitoneal Fibroma.

I have a specimen I wish to present with a short history. This specimen was removed from a woman, aged fifty-three years, who had passed the menopause some three years, and suffered from an ovarian tumor. Her physician recognized the tumor seven or eight months ago, but as it did not cause her any great inconvenience she did not want an operation performed until she was inconvenienced by it. Three months prior to the operation she had a bloody discharge from the vagina, which continued almost without cessation up to the time of her visit to me. At that time I discovered, in addition to the ovarian cyst, that the uterus was slightly enlarged and getting well down into the pelvis, but in the left side was a hard mass that I could not diagnosticate at the time of the operation. There was this tumor without any adhesions growing from the patient's left side. It was tapped and the fluid withdrawn. The uterus was somewhat enlarged; there were several small fibroids in the uterus. On the right side there was a hard mass behind the peritoneum, which appeared to be loosely attached to the uterus. Taking the history of the case and the condition present at the time of the operation, I regarded the disease as probably malignant, and decided to do at once a total extirpation with removal of the mass. The mass lifted up the peritoneum, and postperitoneally over the top of the mass was a dilated ureter which could be easily and readily detected, and above the postperitoneal mass the ureter as it passed over the tumor seemed to be obstructed, so that there was a sacculated condition of the ureter for three or four inches above the tumor. I turned to the opposite side of the tumor I had removed, cut down, and secured the uterine artery on that side, opened the vagina, enucleated the cervix, and secured the uterine artery underneath, and then the ovarian artery on the opposite side, dissected out the tumor, rolling it over on its side without injuring the ureter. There is a slender attachment of the tumor to the uterus, but whether a fibroma or a malignant tumor I cannot say, but I believe it is a fibroma that has pushed its way from the uterus.

DISCUSSION.

DR. JAMES F. BALDWIN.—I desire to say a word or two in connection with the specimen presented by Dr. Hall. He was fortunate in that the ureter in his case was so easily determined, so that its relation could be ascertained and the ureter saved. Some two or three years ago I operated on a case in which, in making a hysterectomy for malignant disease, I was obliged to cut out about one and a half inches of the left ureter intentionally. It passed directly through the sarcoma and could not be enucleated. I caught the proximal end with a pair of forceps, passed through the urethra into the bladder, and then through a small opening cut into the bladder nearest the severed ureter. With the forceps the tube was pulled into the bladder and stitched to it with fine catgut, the stump of the broad ligament being attached to the bladder at the same point, so as to relieve tension. Drainage was inserted through the opening in the vault of the vagina, but there was never any evidence of leakage. The patient got well, and has remained well for more than two years.

Three months ago I had a similar case of malignant disease involving the uterus. Here the mass was on the right side. I tried to save the ureter by the same method pursued by Dr. Hall, which is the standard method, coming down on the left side, across, and then up. After getting below it, however, I found the ureter passing through the mass, or, rather, the mass surrounded the ureter so that a part of it had to be sacrificed in order to remove the growth. I caught the ureter in the same way as before, and used the same technique in implanting it into the bladder. That patient also made a prompt recovery and without leakage. Dr. Larimore, of Mount Vernon, Ohio, who witnessed the operation, expressed surprise that it was done so quickly. It probably required not more than five minutes. After the operation he told me of his having been in New York only a week or two before and having seen one of the most prominent surgeons of that city trying to make a ureteral implantation. This surgeon worked two hours and a quarter in doing it. Five times he got the end implanted, but each time it pulled out before the abdomen could be closed. Finally, however, it held, and the abdomen was closed. Whether it continued to hold or what the result was he did not know, but supposed the patient died. It does not seem to me to be good surgery to work two and a half hours in making an implantation of that kind. If the ureter cannot be drawn into the bladder it would seem to be safer to

remove one kidney altogether than to subject the woman to such a long operative procedure, with the likelihood of the ureteral implantation not holding after the abdomen is once closed.

ORANGE G. PFAFF, M.D.,
INDIANAPOLIS.

Inverted Uterus.

There is nothing particularly remarkable about this specimen, although it is a rather unusual case. The case is one of inverted uterus, which was removed from an insane woman a week ago. The history, as I have been able to gather it, is in brief as follows: The patient was admitted to the Central Insane Hospital of Indianapolis, April 14, 1884. At the time of admission she was thirty-five years of age. Her case was classified as one of chronic mania, her mental trouble having existed for ten years before admission. She had her last confinement eight years prior to being admitted to the hospital. The hospital report shows that the climacteric was established naturally. She had menstruated somewhat irregularly; had enjoyed excellent health apparently, and they had no occasion to prescribe for her in the past year. She was employed in the general dining-room. September 12th she complained of feeling ill in the morning. The day before she had lifted a heavy cake of ice, and felt something wrong. The next day something protruded from the vulva. Attention was called to it, and it was found to be an inverted uterus in complete procidentia. The tubes were easily catheterized. Three or four attempts were made at reduction of the uterus, and failing to do so I cut across the cul-de-sac, inserted my finger in the cervix, which was easily accomplished, and attempted to dilate, with a view to replacing the organ, but could not do so. Then, without difficulty, I did a hysterectomy by the use of a knife, a needle, and a pair of artery forceps. She made a nice recovery from the operation. The condition of affairs shows plainly how utterly impossible it would have been to have reinverted the uterus. The peritoneal surface had become so atrophied and the extruded mucous surface so hypertrophied by twenty-four hours' exposure that it was absolutely impossible to replace the organ.

The other case simply illustrates the close connection which exists between salpingitis and appendicitis, and the specimen speaks more

eloquently than I can of this close relationship. It is hard to tell where the ovarian surface leaves off and the appendix begins. You will see the tubo-ovarian abscess in one place and the appendix in the other.

DISCUSSION.

DR. RUFUS B. HALL.—Mr. President: I would like to ask Dr. Pfaff what were the symptoms which required vaginal extirpation of the uterus?

DR. PFAFF.—There were none particularly except that the organ had extruded, and I found it hanging between the thighs, and apparently it was a source of irritation. Vigorous efforts were made to reinvert it, and, failing in this, it was thought wise to do a hysterectomy. I was really afraid to leave it in that condition after my attempts to reinvert it.

DR. JAMES F. BALDWIN.—The case reported by Dr. Pfaff is certainly very interesting. The history, however, is unfortunately imperfect, and I hope before his reports are published he will obtain a full history of the case by corresponding with the county officials. I hope he will also correspond with the physician who attended his patient during her last confinement. This data ought to be secured before the publication of our TRANSACTIONS. It seems strange that a woman, even if insane, could have had her uterus inverted all of these years without presenting symptoms that would have called the attention of the physicians to the misplacement. It does not speak well for the professional attendants of the hospital, that they had this patient in charge for sixteen years without knowing that she had an inverted uterus.

I have had two cases of inversion of the uterus—one acute. The whole organ was turned inside out, but it was reduced without trouble, and the woman does not to this day know that it happened. In the other case the inversion was due to a fibroid tumor in the fundus. It had lasted for two years. After the removal of the tumor the uterus was reduced without any difficulty.

Some years ago I was consulted by a very intelligent physician of Marysville, Ohio, in regard to a young unmarried woman, never pregnant, who had recently come to him, as he stated, and on examination was found to have inversion of the uterus. I do not now recall of how long standing. He came to me for advice as to what to do. I offered him some suggestions, and a few weeks later he succeeded in reinverting the organ. Here was apparently a case of acute inversion of the uterus without the existence of either a fibroid or a pregnancy.

If the history of the case was given to me correctly, is it not possible that in the case of Dr. Pfaff the inversion of the uterus may have been recent and occurred as the result of lifting the cake of ice?

DR. PFAFF.—When I removed it, it was just as impossible to reinvert it as it is now, after having been in formalin solution. The tissues were thickened, and the organ insisted on assuming this false position as much after removal as it did at the time it was in the vagina. I cannot believe that this condition of the inverted organ could have been produced otherwise than by the progress of those changes which occur with time. There is atrophy on one side, hypertrophy on the other.

DR. D. TOD GILLIAM.—Referring to the case reported by Dr. Pfaff, physicians in an asylum would very likely overlook such a case, for the reason that it is difficult to get an examination. A few years ago I was called to the Central Insane Hospital of our city to examine a patient who was insane on the subject of religion. She was strongly prejudiced against vaginal examinations, and hitherto had not submitted to one. The superintendent, desiring to overcome her scruples, introduced me as a good Christian gentleman, to which she replied. "If he is a *doctor* and a good Christian gentleman we will put a label on him and send him to the World's Fair."

I recall one case in which I removed an inverted uterus, doing a hysterectomy, on account of a sarcomatous growth. The uterus was about the size of a fetal head; there was no object in saving it, and I took it out for that purpose.

In another case, which was referred to me not long since by a physician who had delivered the woman ten days before, there was vomiting and persistent hemorrhage, and he told me that the case was one of polypus following natural delivery. The patient was brought to the hospital for the purpose of having this polypus removed, but after examining the case carefully I found it was an inverted uterus. In that instance I did not know of the Hirst method of splitting the cervix, so I dilated it, and under anesthesia I did not have very much difficulty in reducing the uterus. If I should have another case now I would certainly pursue the method recommended by Hirst—that is, split the cervix anteriorly and posteriorly, if necessary, to give plenty of room and push the uterus up into its place.

DR. L. H. LAIDLEY.—I remember a case in which there was complete prolapse of the uterus and inversion of the organ as the result of the presence of a fibroid tumor. In splitting the covering and removing the tumor it, likewise, necessitated the splitting up of the left lateral side of the neck of the uterus, which contributed to the possi-

bility of reducing the organ after the removal of the tumor. I was surprised to find, after the removal of the tumor, that the uterus could be replaced.

I agree with the suggestion of Dr. Gilliam that we have not yet attained the highest success in the treatment of these cases. The method of Hirst I followed out unconsciously, as I was not aware that he had suggested it. At any rate, the method contributed very much in the case I spoke of to the return of the uterus to its normal position.

Dr. Rufus B. Hall.—I want to make a few remarks in regard to the specimen presented. Last year, at our meeting in Indianapolis, I presented a retroperitoneal sarcoma in connection with a hysterectomy. The tumor was the size of a cocoanut or thereabouts. In that case I made a total extirpation in order to control the bleeding that occurred after enucleating the retroperitoneal tumor. The tumor was removed from below, and it was a much easier operation in technique than this one. The management of the ureter in this instance was more difficult than in that. About three-quarters of an inch of the ureter was adherent to the tumor, and in turning it up, over, and out I feared I would tear the ureter across. After removing the tumor I examined the ureter carefully to see if there was leakage or not. When I left it I was not certain but the ureter was still in continuity. I carried a piece of gauze through the vagina for drainage.

Dr. Pfaff.—I would like to say that in attempting to effect reinversion of the organ, after making a cut across the cul-de-sac, then cutting through the cervix, I used enough force with one finger in the torn side, and the other on the opposite side that was not torn, to tear the wall of the uterus quite a little, and it did not occur to me that I was using an extraordinary degree of force, so that unless it is because of the atrophic changes in the uterus, the age of the patient—fifty-one—and the friable condition of the organ, I would not consider that cutting on either side of the uterus, and using that method of inversion and attempting to force the organ through the cut cervix, would be good practice, because with a moderate amount of force I could tear the uterine walls readily. The uterine walls would tear very much more easily than would be advantageous in attempting to crowd the uterus through that small opening. If I were to attempt the treatment of such a case again of this long standing, or a case of, say, a few months standing, following confinement, I should be tempted to do hysterectomy. I believe the force necessary to reinvert the uterus would bruise the organ so that there would be more danger in leaving it than in taking it away.

PRIVATE HOSPITALS AND THEIR MANAGEMENT.

By JOSEPH PRICE, M.D.,
PHILADELPHIA.

The private hospital has never been discussed in this Association, hence I take pleasure in presenting the subject at this time. The few specialists interested and owning such institutions commonly refer to them in papers and discussions, or in reporting cases, in simple references, as "my private hospital" or "my sanitarium." In America they are not uncommon; in Europe and especially on the Continent but few exist.

The early history of such institutions would be interesting if it had been carefully recorded. They had their origin in Southern cities and States, and were opened by a few advanced thinkers and workers that they might control patients and perfect operations hitherto always unsuccessful.

It requires many years, and even centuries, for general city or school hospitals to accumulate sufficient endowment for their thrifty support. Throughout this country they are largely dependent upon political or State support, and when so supported they are commonly very corrupt and dirty. It is exceptional that you find a hospital run by a State legislature, supported by political bosses, either clean or doing good work. Again, they are commonly degrading our profession and specialties. They have out professional agents seeking material on a commission. The well-organized private hospital is at the present time doing the best work, giving the most advanced teaching, offering apprenticeships to a few young men, with a discipline and prolonged training not offered or given by the school or the political hospital.

The political hospital is not the only corrupt institution in our midst. A few of our well-endowed general hospitals, managed and handed down in families to the third, fourth, and even the

fifth generation, are most dangerous institutions to our profession. It is always a misfortune to an endowed charity or public hospital for a family to be in full possession of its funds or endowments. It commonly results in impairing or destroying its usefulness. It is curious, their motives seem so foreign to those of an individual interested in a strictly private institution. No one has ever, to my personal knowledge, made money and accumulated wealth out of a private sanitarium. He may out of the fees, but never out of the board, care, and nursing of patients. It is my impression that the board of patients rarely pays 5 per cent. on the money invested. A good number of these institutions have been financial failures and have closed. Private hospitals give the operator the best opportunity for doing good work. He commonly, in the choice of location, looks after the environments and sanitary conditions of the location, and selects or builds a house suitable to the work, and makes a choice of attendants, the best to be had, the best to be made, in his community, or goes abroad for better talent than he has at home, regardless of the expense. He concentrates his forces, makes painstaking preparation for all his work, the patient receiving thrice more care before and after operation than in public institutions. In well-managed private institutions the patient has one or more attendants, with well-regulated relays. While visiting my friends owning private hospitals I commonly find a nurse with each and every patient, doing fancy work, reading, and entertaining her patient. The institution is tidy and neat. In public institutions I rarely find a nurse in large wards, the only attendant about the patients being a convalescent patient or an old pelican of an attendant. Professional care, one or many visits daily, favors a speedy convalescence. The early and late assurance that she is doing nicely does a world of good. Fresh beds and the numerous little attentions from young, intelligent nurses favor comfort and confidence.

It is interesting and surprising how much more cheerful patients are in private hospitals than in general, public, or school institutions. The surroundings of the general hospital are generally depressing. Patients are eager or impatient to get home prematurely. In a well-managed private institution they are easily controlled and willing to remain until they are fully convalescent. Hurrying the patients out of general hospitals one, two, or three weeks

after serious operations results in accidents and complications, postoperative sequelæ, difficult to correct. In private institutions we tack on a well-directed rest-cure treatment which gives pleasing results.

The nurses should all be professional rubbers, receiving twenty or forty lessons in practical massage from a recognized teacher of the subject; one or two months in a diet kitchen, one or two months in the operating-room, making a young woman a very valuable nurse in private practice. I much prefer nurses from private institutions to those I commonly meet from public institutions. They are also the choice in wealthy and professional circles. The private hospital is doing the best work, giving the patient the most costly care and attention, refining nursing, elevating the diet kitchen, getting the best results, primary and remote. The church hospital follows with better work than the general or public hospital. The public hospital should be all that is desirable and all that can be attained and can be accomplished by brains and money, and should be the pride of the city or community in which it exists, and should be used for the destitute only. The worthy poor should have the best. A few private and semi-private institutions have done much to improve general hospitals. The opening of private hospitals in many cities throughout the country resulted in a reorganizing and rebuilding in our old, decomposing general hospitals.

I am sorry our profession does not realize or fully appreciate how much the private hospital has done for it and for sufferers. The management of a private institution is simple and uncomplicated. To be president, secretary and treasurer, and sole manager is easy. Never mix matters with a matron or a nurse. They can rarely get on together. The widowed sister-in-law of one of the directors of the general hospital ought to favor the resignation of the whole staff. A moral, refined nurse, one that has served in public and in private, whose early home life gave her general practical knowledge of housekeeping, finds her duties sufficiently light.

The character of private houses differs decidedly from old-fashioned homes. The modern house is charged with plumbing and baths, and I am satisfied is not as safe as a house free of plumbing. The preparation for an operation and the enormous amount of time

necessary for subsequent visits; the emotional disturbance due to the presence of children, family, and friends; the difficulty in securing relays of nurses, result in the possessor of a private hospital sending nearly all his patients to it, where he can see and care for often a large number in a limited space of time. If he depends upon a general hospital he has to wait for rooms or beds.

The multiplying of hospitals throughout the country, and the choice of prominent and wealthy citizens for managers and directors, have resulted in an effort on the part of such philanthropists to reduce fees and also the charges for the care of patients. The little hospital in every small city and town, with ten or twenty private rooms, makes the absurd charge of eight and ten dollars per week for neatly furnished rooms. Some of these beds or rooms are endowed. Rarely are such directors willing to pay a fee. They commonly place wife or daughter in the hands of a beginner or inexperienced man, and frequently lose her. Very few of the surgeons doing work in these small hospitals have ever served long apprenticeships in surgery or been resident in a good hospital. They are rarely prepared for the work.

DISCUSSION.

Dr. James T. Jelks, of Hot Springs, Ark.—Mr. President: I confess that I have been disappointed in the paper of Dr. Price. I wanted to get some idea how to run a private hospital, as I have one on my hands at the present time. I thought Doctor Price would tell me how to get along with it, how to manage it, and how to separate the matron and nurses, so that there will be no conflict between them. I trust, in closing the discussion, he will tell us how to make money out of these institutions. That is what I wanted to hear. It is taken for granted that we save lives. In a first-class private hospital we are prepared to give expert skill, good attention, and painstaking care to patients; but we cannot do this as well as we would like to do it when there is a deficit on the ledger. When you touch a man's pocket-book you touch a very sensitive spot. I enjoyed the paper very much, but I hope Dr. Price will tell us how to run private hospitals so as to make them a success financially. I agree with him that we should not put the prices in caring for patients too

low; seven or eight dollars per week is outrageous. If we charged from sixty to one hundred dollars per week it would suit us better. If we can get a class of patients who will pay these amounts there will be no deficit on the ledger. Let the poor patients go to the general hospitals, where they can receive very good attention.

DR. L. H. DUNNING, of Indianapolis, Ind.—I was waiting for some one to say something upon the opposite side in order that I might agree with him. I know very well that Dr. Price will have the last word on the subject. He said a great many good things in his paper, but I cannot agree with some of the points brought out. I suppose a man's management of a private hospital and its success will depend very largely upon his experience in the matter. Dr. Price has had experience with both general and private hospitals. He is running a private hospital now. I have had experience with both, and am connected with a general hospital now, so that you know where I stand. I had to make my private hospital larger or quit, and I quit. I did it because I thought I could do just as well for my patients in a public hospital or semi-private hospital, and better for myself—that is, taking the mental strain incidental to conducting a private hospital into consideration. I suppose the manner in which we view a private hospital will depend very much upon the locality in which we live and the hospital surroundings. For many years the leaders in antisepsis in our city were in a general hospital. The results were good. At the present time these leaders in cleanliness and antisepsis are in two of the larger hospitals (semi-private), one Catholic, the other Protestant.

In regard to the matter of care of patients I have for many years, in my private hospital, done the best I could to care for patients as well as possible, with a great expenditure of nerve force and loss of sleep; yet when I left my own hospital and went into a semi-private one I found I could have my own way quite as well. I was relieved by an excellent physician, and could command more nurses for my cases than I could in my own hospital. So one of the arguments made by the essayist, in view of my own experience, falls to the ground. I was thinking, when the paper was being read, of what the doctor said, that in most private hospitals he found a nurse with each patient. If there is a private hospital with a capacity of fifty that will sustain fifty nurses I have not seen such an institution. There is one nurse to every two and one-half patients in our Catholic and Protestant hospitals.

A good many reasons can be advanced in favor of public hospitals. The expense of caring for patients in private hospitals is greater than

it is in public hospitals, and unless a man takes the money out of his own pocket he has no means of support except that which comes from patients. He must charge a larger fee; he must charge more for nurses, and exact a larger rent. Furthermore, in conducting a private hospital he necessarily excludes charitable patients; it takes him away from those patients. Another reason why I think we ought to encourage public hospitals is because we bring ourselves into closer sympathy with the general practitioner. We receive more help from him; we can give him more help; we take care of his poor patients along with the others, and we accomplish greater good by that means. I cannot understand, in these days, why a church hospital cannot be conducted on just as good principles as the so-called private institutions. My own experience teaches me that I can get as much as I can in running my own institution, with less worry and tear, and with more benefit to my patients.

I have had no experience whatever with any hospitals employing paid agents. I have heard the charge made many times in our city that it has three semi-private hospitals, and that there is not one of these that keep any paid agents. They pay no commissions, and solicit no business. Two of them do charitable work, and are supported in that charitable work by physicians.

There is certainly a great advantage in a semi-private hospital, in that we can obtain more instruments for which we do not have to pay; that is to say, we can have a laboratory with its accessories, which very few private hospitals have. We can have a larger corps of trained assistants than we can in a private hospital, unless the latter institution has a reputation sufficient to draw a great many good men who wish to work for nothing or be paid a small fee.

Dr. John B. Deaver, of Philadelphia, Pa.—It is not my pleasure to run a private hospital, but I perhaps do the next thing to it, in that I have charge of the surgical service of the German Hospital.

I can strongly indorse what Dr. Price has said. I have had experience with a number of hospitals during the past years, having been connected with St. Mary's, St. Agnes's, the Philadelphia Hospital, the University Hospital, and now for several years with the German Hospital.

Dr. Price is correct in what he says about nurses. I am absolutely sure of that. I frequently say to students that the most important man at the operation is the anesthetizer. If an operation is done well the surgeon has practically nothing more to do; it rests with the nurse. In general hospitals there are not enough nurses, and I maintain that one of the strongest points in favor of a rapid and

uninterrupted convalescence is that the patient be constantly attended by a good, tactful, and faithful nurse.

Much of the success of Dr. Price is not due entirely to his manual dexterity as an operator, but to the after-care and treatment which his patients receive, and to the absence of friction in the running of his hospital. One of the strongest points in favor of a private hospital is that the surgeon is not embarrassed with a large number of managers.

As to political influence, I may say that I left the Philadelphia Hospital on account of politics. I had been connected with the institution for some time, and because I missed one clinic I received a note from the president of the Board of Managers censuring me for being absent. I therefore presented my resignation, as I did not feel that I cared to be dictated to by ward politicians. Medical politics is the worst kind of politics. It has ruined not only hospitals, but medical schools.

As to the question of charity patients, my assistant kept a record of Dr. Price's work one year, and found that he had operated on two hundred patients who did not pay a cent for their board, to say nothing about not paying him a fee for his surgical work.

With reference to having a great many assistants, the fewer assistants we have the better. I think Dr. Price's success is in part due to that. The more a surgeon does at his operations, the more ligatures he ties, the fewer the cases of hemorrhage. If he delegates this work to an assistant it is not always done as satisfactory as if the surgeon had done it himself.

Referring to laboratory methods, what does the blood count do for a patient who is dying of appendicitis? It matters not whether the patient has a leucocytosis or not, the appendix should be removed at the earliest possible moment.

I can heartily concur in everything that Dr. Price has said.

Dr. Edwin Ricketts, of Cincinnati, Ohio.—I have been much interested in the paper of Dr. Price, and I want to say that I would rather trust the administration of chloroform to the family physician any time than to the interne of any public hospital, with all due respect to the interne. I have seen some things in a general hospital within the last few months that have surprised me. Speaking of charity patients, I want to do for them the same as I do for my private patients. In one of the charitable institutions in this country I saw a patient who was placed under the anesthetic at 8.35 A.M., was scrubbed and scrubbed, but the operation did not begin until 9.07. This is ridiculous. I saw four charitable patients in that institution

who were similarly treated, the average time of the anesthesia being thirty minutes before the operation was commenced. I am sure that the surgeons in that institution do not treat their private patients in such a manner.

As to private hospitals, I have had some experience with them. I do some surgical work in these hospitals now. There are claims for private house operating. The results obtained under such circumstances are second to none. Myomectomies, pus-tubes, hydrosalpinx, ovarian tumors, cystic degeneration of fibroids, hysterectomies per vaginam and abdominal, have been done and are being done with just as good results as they are done in the best private hospital under the sun.

In Kentucky I did four operations, and the man who gave the anesthetic had spent eight weeks in one of the leading polyclinics in this country. A man who stood at the table and was practising in the country had been an interne in a large hospital. These men have claims, and there is no use to deny the fact. There is a mental depression in connection with some of these cases that cannot be overlooked. In many instances, for some unknown reason, these patients will do better at home than they will in either a private or a public institution.

Dr. W. E. B. Davis, of Birmingham, Ala.—I fully indorse what Dr. Price has said in regard to the number of nurses. As a rule, private hospitals have not had and do not have enough nurses. The private hospital should have at least two nurses for every three patients. With a smaller number than this the surgeon will be hampered in his work.

The question raised by Dr. Ricketts has been settled. If a surgeon only has a few cases he can do as good work at the home of the patient as he can in a private hospital. He would not be able to do many operations a week and take care of his patients properly out of a hospital without taxing and worrying himself to death.

In regard to the administration of the anesthetic, I cannot understand why Dr. Ricketts should take the position he has. It makes no difference how well the country doctor may give an anesthetic, you want to be sure that you can rely on the man who administers it. The teaching of Dr. Ricketts, therefore, is liable to be harmful.

Dr. James F. Baldwin, of Columbus, Ohio.—It seems to me that this is a kind of experience meeting. I have had a fairly large experience with general hospitals and a much more limited experience with private hospitals, and I can heartily indorse all that has been said by the last two or three speakers. It seems to me Dr.

Dunning has been a little too vigorous in his opposition to private hospitals. I have been connected with a private hospital for over a year, and for several months have had charge of one, and instead of growing gray with the experience, my friends have congratulated me on my resumption of youth. My patients are not neglected. If a nurse is not up to the proper standard she is dismissed, and I do not have to go before a board of lady managers or a superintendent to complain about the incompetency or carelessness of a nurse. I heartily approve of what has been said in regard to anesthetics. I do not trust the administration of anesthetics to hospital internes. I have had five deaths from anesthetics administered by hospital internes. I now have a paid anesthetizer, whose services I can command day or night, and since employing him I have had no deaths and no particularly alarming symptoms.

As to assistants, I believe the best results are obtained by employing as few as possible. Of course, we need someone to assist us at the operation, but the assistant should not tie the ligatures. He should not do important work. He may hold the forceps, the retractors, shift the position of the patient, etc. I have had the same man for five years, but he never ties any ligatures. I do that myself. I even close the abdomen in every case except when I am obliged to leave the operating-room unexpectedly. He comes at any time I want him, because I pay him a salary. I do not trust to hospital internes as I formerly did in public hospitals.

In my own hospital if I can pay expenses I shall be satisfied, for the reason that if a man admits no charity patients, if he confines himself to the wealthy and charges $25, $50, or $100 per week for each patient, he will doubtless have a cash balance on the right side of the ledger; but we do not have that kind of patients in Central Ohio. Many of my poorest patients have been my best ones. I have enjoyed the work of operating on them better. I have always had a large amount of charity work to do both in public and in private institutions, and I give the poor just as good care as the wealthy. I give them a private room or two rooms if necessary. It is the results I am after. Rich patients can afford to pay a large price for their rooms, but I do not think Dr. Price or anyone else can tell us how to make much money out of private hospitals.

The time is coming when the public will wake up to the fact that public hospitals as at present managed debauch both the middle classes and the profession. I believe the time is coming when public hospitals will be placed under the same charge as our poor-houses, and it will be regarded as something of a disgrace for one to go to

either of them. When a man comes to me with a chronic trouble that cannot be cured by surgery and I suggest that he go to the infirmary where he can be taken care of until he dies, he flares up at once at the idea of going to the poor-house. He is perfectly content to live on charity in a hospital, but he objects to living on charity in an infirmary. The public hospital should be a place for the poor alone, and the rich, or those who are able to pay, should go to private or semi-private institutions. Many of the larger semi-private institutions do just as good work as the strictly private.

Dr. Edwin Walker, of Evansville, Ind.—A good deal of the success attained in running a private hospital depends upon the personal equation. If a man has a temperament easily annoyed by details he had better keep out of a private hospital. I have had several years' experience in a public hospital, and for the last seven years I have conducted a private hospital, and I do not think I look any more worried than Dr. Dunning does. My work has been more successful than it ever was in a public hospital. There is the advantage of having a complete force under your control. You have the same people every time you operate; you get accustomed to them, and they to you. I have the same man all the time to give the anesthetic. I have few assistants, but the same ones all the time. I cannot sympathize with Dr. Dunning. I do not know why he has so much trouble. Occasionally I have trouble with a nurse and dismiss her; or I have trouble with the cook. But, as a rule, my hospital runs along satisfactorily, and I get better results than in any other way.

There is another thing that annoys me about public hospitals and semi-private hospitals more than anything in connection with my private hospital, and that is gossiping and bickering between the doctors and Board of Managers, and it keeps a man constantly irritated and annoyed.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I did not expect to participate in this discussion, but two or three points have come up which have attracted my attention. I do not think anyone has a disposition to either fight or oppose public institutions for any good they can do. I believe every man in this country ought to have the right to express his convictions, and the right to do as he pleases about running a private hospital. If he can run it to his satisfaction, all well and good. If he cannot do so, let him quit. I have conducted a private hospital for fourteen years, and I am not ready to quit it yet. I have a great many little annoyances to contend with. I may be a little annoyed by the cook sometimes, and I will say in passing that the cooking department is one of the most important ones con-

nected with a private hospital. The butcher and cook are not to be despised. There are a hundred-and-one little odds and ends that must be looked after if you would hope to attain anything like success in the management of a private hospital. It was the late Mr. Tait, I believe, who said that a successful operation, after the removal of an ovarian tumor, for instance, implied the perfection of a vast number of little details; and the successful management of a hospital implies the ability to overcome or guard against a vast number of little annoying things that occur. If a man will permit these little things to worry him he will become disgusted with a hospital.

There are one or two other points touched upon by the previous speakers with which I entirely agree. If a man expects to conduct a private hospital for gain he will be disappointed. If I had to do abdominal work, and do it exclusively in public hospitals or at the houses of patients, I think I can say positively you could count me out. I would be about ready to quit surgery, and I am a little too young to quit yet. There are a number of points in doing abdominal work that are worthy of consideration. One has been mentioned in particular, and that is the anesthetizer. I do not worry about any operation that I am called upon to do any time, day or night, if I can have my anesthetizer with me. When the operator is thoroughly accustomed to his anesthetizer he knows that he discharges his duty properly, and the operator can throw off the anxiety and restraint of watching the patient for fear something might go wrong with the anesthetic. If the surgeon is called upon to operate in an emergency on a case of appendicitis, ectopic gestation, strangulated hernia, or intestinal obstruction in any adjoining county or State, and he must pick up any man he can get to give the anesthetic, it is more or less embarrassing and a disadvantage.

There is nothing that I could say in favor of private hospitals more than to indorse what Dr. Price has said. I can say many things in favor of some public hospitals. I have the good fortune to be on the staff of the Presbyterian Hospital in Cincinnati, and I make a large number of operations there each year. Taking the cases as they come, I get a worse lot of cases to deal with at my own hospital than at the Presbyterian. They are more desperate. What are the results? I have a higher mortality at the Presbyterian Hospital than I do at my own hospital. It may be my fault, but I do not believe it. By the way, the Presbyterian Hospital in Cincinnati is not a large institution; it has one hundred and thirty beds. The building is a new one, erected by the donation of one man three or four years ago. Everything is as modern and as up-to-date as the German Hos-

pital. They have a training school for nurses; they have lots of little odds and ends to contend with in managing it, and all those things that go with public institutions which make it hard. I wish to emphasize the point that if I were to be divorced from my private hospital I should wish to be divorced from surgical work.

Dr. J. Henry Carstens, of Detroit, Mich.—A few words about private hospitals and anesthetizers. In the present state of our knowledge we do not know very much about the cause of death during anesthesia. While there are deaths which are due to ignorance and carelessness on the part of the anesthetizer, still I think that the most experienced and the most careful men will at certain times have, as quick as a flash, deaths from chloroform, and no one can tell what these patients died from. Although it is undoubtedly much better to have a man of experience to give the anesthetic, and we feel much safer, we all have to contend with the dangers of anesthesia, and when we are operating on a patient he or she may suddenly die. If a patient should die under an anesthetic I do not blame the anesthetizer. I am the responsible man; I take the responsibility, and not the anesthetizer. He administers the anesthetic under my supervision. I tell patients distinctly that there is more or less danger connected with every case of anesthesia, and I do not care who administers the anesthetic. I have seen deaths occur when the anesthetics have been given by men of great experience in this particular line.

So far as the private hospital is concerned, I agree with much that has been said by Dr. Price, but there are disagreeable features connected with it. There are troubles of all kinds. Other hospitals, public and semi-public, are not as bad as a great many say they are. There are some hospitals in this country that are very well managed. They have sensible persons on the boards of trustees; they are not political bums. They do not appoint some ward heeler as a superintendent; they do not appoint every Tom, Dick, and Harry as house physicians. The house physicians have to undergo a competitive examination before they receive their appointments, and the managers of hospitals feel that it is absolutely essential to have good men to care for patients. If they are young men they do not like to have some person constantly stepping on their toes and interfering with their work; they do not like to have a board of lady managers, a woman's auxiliary staff, or superintendent, who are continually making trouble for them, for then they kick. By and by, when they get a little older and more sedate, they will take the trustees by the ear, lead them aside, give them a sensible talk, and the trustees will conclude that it is for the best interests of the hospital when the physi-

cians are allowed to run the *medical department* of it. As a rule, physicians can run a hospital as well as laymen can.

With reference to the remarks of Dr. Ricketts, I will say nothing. He believes in house-to-house operating. I do not. If a patient needs a surgical operation she had better go to a private or general hospital, and by a little persuasion a patient will follow our advice. Of course, I am not speaking now of emergency cases. No surgeon can pay that attention to a patient after an operation that he ought to do when an operation has been done at her home. He cannot see the surgical patients outside of hospitals as often as he can in these institutions.

So far as the results are concerned in private hospitals, we must consider the class of patients that are operated upon. Who are the patients that go to private hospitals? Are they the riffraff or the better class of patients who are able to pay? They are the patients who do better after operations, who have greater powers of resistance. Take a hundred patients of that kind and certainly you will get better results than if you take the riffraff of society—the miserable whiskey-soaked patients whom we get in charitable hospitals.

Dr. L. H. Laidley, of St. Louis.—I have seen the results of private hospitals from a financial stand-point, as well as the results of operations both in private and public hospitals in our city. There are now only two private hospitals in our city, and those are not financial failures. It is the point of personal equation that I wish to bring out in this discussion. A private hospital under the care and management of Dr. Price would be a success, and it is doubtful whether he would meet with such success in a public hospital. We must not overlook the fact that Dr. Price's success in a private hospital depends on his skill and executive ability.

As regards a public hospital, a good deal depends upon whether a surgeon can have the same authority and influence that the essayist has in his hospital. I have been connected with an institution of that kind for the last fourteen years, and I am glad to say that I have never had the ladies' board, the board of directors, or the authorities dictate to me what I should or should not do. They were satisfied to get rid of the management of the medical department, and with a level-headed lady superintendent I have never had a word of disagreement or dissatisfaction.

As regards the kind of assistants, Mr. Tait once made a pertinent remark to me. He said: "Young man, if you wish to get along in this work look out for your assistants and nurses; they are not always to be trusted."

I do not want any physician to help me as an assistant except to administer an anesthetic. I prefer a well-trained nurse who wears gloves and solves the question of aseptic hands. Personally, I do not wear gloves because I think I can do better without them.

As to the administration of anesthetics, I try to keep a trained anesthetizer as long as I can. I have never lost a patient from its administration.

DR. A. VANDER VEER, of Albany, N. Y.—I have been connected with the Albany Hospital for over thirty years, and I presume I live in a city where there is more politics to the square inch than in any other city in the United States. Our hospital is managed in this way: We are not troubled by having forced upon us a superintendent or matron who has a political pull. The hospital is organized on the basis of contributions; every fifty dollars is entitled to one vote. We elect a board of governors of twenty prominent citizens, who are successful in their business relations, who look after the institution. There is one point that has not been touched upon either in the paper or in the discussion, namely, with reference to the management of hospitals from the governors' point of view with the assistance of representatives of the medical profession. I wonder how many of you can say that in your public hospitals you have medical men upon your boards of governors? We fought for the representation of medical men on our board of governors for some time, and at last we secured it, and now we have a certain number of physicians associated with the board of governors who keep in close touch with the board, in such a way that any suggestion which comes from the medical staff receives attention.

Several years ago Dr. Macdonald and I started a private hospital, and during that time we have had only two changes in operating nurses. One nurse remained with us two years, and another for nearly three. As to the number of cooks we have had during that time, I will not undertake to say. Changing cooks is a very annoying feature of private hospitals. Our private hospital has been a success. When we built a new hospital we considered the matter of taking care of patients who gave us our bread and butter, and the board agreed with our methods of building it. We have wards for charity patients and wards for semi-private patients, four and five in a ward. We have private rooms for strictly private patients. We have a maternity ward, a children's ward, an isolation ward, and we believe the institution is well equipped and up-to-date.

As to the care of patients, I must say that in our public hospital we do the same as is done in a private hospital. We have now in

our public hospital one anesthetist, who has charge of the internes. He gives the anesthetic, and the internes administer it under his direction.

As to the comfort of operating, it is no more comfortable to operate in a private than in a public hospital. The facilities are much the same. There may be less mental strain in connection with one than with the other. In our public hospital our supplies are ready for us; we are not obliged to make out or certify to bills, and we have no trouble in regard to the housekeeping question whatever. We have a matron who looks after those things, and I agree with Dr. Davis, that in order that patients may have better attention we should have more nurses connected with private hospitals.

I do not agree with Dr. Baldwin that we should not run a private hospital for the purpose of making money out of it. It is not right for us to give our time and life's work and not have anything put aside when old age is upon us. As the result of our reputation, skill, and ability in running private hospitals we should accumulate some money.

Every public institution should have in its by-laws a clause similar to the one put in ours by the board of governors of our hospital, namely, that city patients are admitted by the order of the overseer of the poor. Patients from the country must have the indorsement of their family physicians, and they will be admitted to the public wards at $5 per week, or to the semi-private wards at $8 or $10 per week, or they may have private rooms at from $15 to $40 per week. If they are put in a private room they are able to pay both the physician and surgeon. The board instructs patients to make their own terms with the physician or surgeon as to compensation when they take private rooms. If they wish a private nurse they must pay for one. They are given to understand that a private nurse will cost them $3 for every twelve hours. Patients are allowed to see their friends during the day.

I cannot agree with Dr. Ricketts in regard to doing surgical work at different houses, for the reason that I cannot do the amount of work that is required of me. I can do much more work in a private hospital. If I went to the city of Albany well equipped and received no recognition from the hospitals there, and was ready to do work and patients came to me, I would not hesitate to start a private hospital. I believe if I were doing work in a small country town of say ten thousand inhabitants I would fit myself accordingly and endeavor to run a private institution, because I believe a certain amount of work must be done either in a private or public institution, and you cannot do it at the different homes and different houses.

The point I wish to emphasize is that in connection with public hospitals we should have representatives of the medical profession upon the boards of governors.

Dr. Richard Douglas, of Nashville, Tenn.—At the risk of being a little tedious I desire to say a few words in connection with the subject under discussion. I have had twelve years' experience in running a private hospital. I know that it is sometimes wearisome and trying upon one's nerves, and yet, as Dr. Deaver has said, in the management of a private hospital one feels comfortable from the fact that he knows he is the "boss." I would not have you think that I overestimate my own importance in the management of a private institution. I regard the head nurse just as important as the surgeon. It is absolutely necessary to have a superior woman as head nurse. In the management of a private hospital we should select as head nurse one in whom we can place implicit confidence, and let her take charge of the other nurses, and the less the surgeon has to do with the nurses the better. Instructions should be given to the head nurse, and these in turn imparted to those under her. We should not be careless in giving directions, as we go from patient to patient, to individual nurses in charge of those patients. The instructions should be written to the head nurse, and she should be held responsible. This is a very important feature in the management of private institutions throughout the country. Patients have come to me who have acquired the habit of hospitalism in going from one infirmary to another. In some hospitals patients are supplied with literature telling them how to do ventrosuspensions and hysterectomies, and all that sort of thing, and they really consider themselves competent to discuss such questions, so that when an operation is contemplated they have been informed by the nurses what to expect from reading the literature that has been distributed to them. I look upon this as outrageous; it is quackery. It is disgraceful to work upon the sympathies of patients in this manner. In some private institutions, when an operation is to come off, patients are in a great state of emotional excitement, and they know what is going on. This is wrong. A patient in a private institution should be kept in entire ignorance of everything else that is going on in the house. If a nurse talks to one patient about another, or speaks to this or that patient about an operation, etc., she should be dismissed. These are seemingly small matters, but are very important ones.

Another point: In the management of a private hospital, in the selection of nurses we should always get women of cultivation, women of refinement, and not women who come to us and cannot tell who their fathers and mothers were. We should never seek nurses from

the lower classes of society. Superior women desiring positions as nurses can be found throughout the South.

In regard to running a private hospital for the purpose of making money, I should long since have gone out of business if my institution had not paid. Dr. Vander Veer has certainly expressed my sentiments in that particular. In justice to my wife I have no right to work for nothing, and at the same time I do not think I am going to put myself on a par with a hotel-keeper. In some institutions patients are charged $80 or $125 per week simply for board and attention. That is wrong. Let us charge patients what is right and consistent, say $50 or $60 per week for board and attention. This amount will cover it, and then the operator should charge a good fee.

Dr. F. W. McRea, of Atlanta, Georgia.—I should like to say a few words on this subject of the management of private and public institutions or hospitals. I am connected with a public hospital in Atlanta, and my work there has been just as satisfactory in every way as in a private institution. We have had absolutely no interference from the board of trustees or city council, though it is a public institution supported by the city and governed indirectly by the city council. The internes and house physicians are very conscientious in the discharge of their duties, and if their attention is called to any lack of technique or any trouble whatever they are always willing to correct it. I am also connected with a private hospital—an institution controlled by myself and my colleagues. We appoint the house surgeon; we select the head nurse, and the medical attendants and nursing are absolutely under our control. We get good results.

I wish to say a word or two now in reference to the remarks of Dr. Ricketts relating to operating at the different homes of patients. If a surgeon is painstaking and exceedingly careful, and he has not an immense amount of surgical work to do, he can do just as good work in operating in a private house as he can in a private hospital. It can be done; it is only a question of taking the pains necessary to do it. It is the exception to find a country doctor who will not absolutely carry out the directions you wish. That is all you want. The man who assists you can hold the ligatures, retractors, and things of that kind, but the surgeon ought to do all the work. I have been in different parts of Georgia and South Carolina for the purpose of doing abdominal operations, strangulated hernias, appendicitis cases, etc., and have obtained practically as good results as I have at either the St. Joseph's Infirmary or the Grady Hospital in Atlanta. It is largely a question of care of the individual patient. It takes an immense amount of time and work, but it can be done. It is a great

satisfaction to some patients to be operated upon at their homes. When patients are willing to go to the expense of being operated upon in their homes and can afford the expense it is better to have them do so. There is an air of hospitalism about a large hospital (public), less so with a private hospital, which does not obtain in private homes. I indorse that part of the remarks of Dr. Ricketts.

DR. PRICE (closing the discussion).—I am very glad that my paper has elicited such a free discussion. The discussion has covered considerable territory. I am sorry that men like Mr. J. D. Lankenau cannot run more institutions of this kind, to relieve us of the burden or responsibility of doing so. Private hospitals are expensive luxuries in small cities and towns; they are short-lived. I have known four or five of them to die in a year in towns of ten, fifteen, and even twenty thousand inhabitants. I doubt whether we have an institution in this country which corresponds to that managed by Mr. Lankenau or to the Royal Infirmary of Edinburgh. Some of you will remember the onslaught on private institutions made by the chairman of the Surgical Section of the American Medical Association, Dr. John B. Roberts. His remarks were unfortunate and far from truthful. He looked upon them as strictly and purely mercenary institutions, and compared them to the " I-want-your-money-or-your-life " scheme or to the sand-bag.

Allusions have been made to the mortality in private and public hospitals. The mortality is, of course, very much larger in public than in private institutions. We can hardly be brought back to the position taken by Dr. Ricketts, although I insist that I should always have a lower mortality from house-to-house operating than from operating in a private or public hospital. There is no question about that in the minds of those who have done much house-to-house operating. I know of no one who has followed house-to-house operating more faithfully than I did for years. I operated upon patients beneath stables and above them, at an expense for nurse hire of $1200 a year. The nurses rendered efficient service. To fortify my position I will call attention to the results of the late Mr. Tait in private and public hospital work. He emphasized the morning and afternoon work. He worked at No. 7, The Crescent, in the morning, with a mortality of 3.5 per cent.; he operated at three in the afternoon at the Midland Dispensary, Sparkhill, on patients with rosy cheeks, but with acute early development, with a mortality of 5.3 per cent.

Conflicts between the nurses and matron should not occur. You should not have a matron. If the nurses are thoroughly competent they will attend strictly to their business. I remember three good

nurses who had twelve or more typhoid fever patients, with muttering delirium and incontinence, to look after in a certain hospital, and the matron made the complaint to the board that the nurses were changing the sheets too often.

The question of paid assistants is a very important one. Nothing has been more neglected than that. We have less skilful pathologists and microscopists connected with the laboratories of our institutions from the fact that many of them are poorly paid for their services, and if we expect men to make analyses, to examine sputa, etc., they should be paid for their services. Assistants should be well paid. Some of you doubtless remember a card on Emmet's mantelpiece in his waiting room which reads, "$25 for assistants." Young doctors have been used too much and paid nothing for their services, both in private and public institutions. The sooner we adopt the plan of paying assistants the more rapidly will we advance, and I am glad to hear that some of the gentlemen do pay their assistants.

Speaking of results, I could have brought with me pamphlets in which I have reported a hundred or more operations without a death, illustrating what can be accomplished by house-to-house operating. But it means an enormous expenditure of time and money, and requires painstaking work that can be easily followed in a private hospital.

Referring to discrimination in private or public hospitals, I have been on the visiting staff in public hospitals, and I know the members of the surgical staff are afraid of each other. They change places every three months. Two surgeons, we will say, go off duty on the first day of March, with a good record; they have had no deaths. The members of the staff who succeed them are placed in the uncomfortable position of being criticised by the nurses and the directors, perhaps, should they lose two or three cases. They are talked about. Someone told me of a surgeon who, after opening the abdomen, said to his assistants: "We will close the incision without removing the tumor in this case, because we have lost too many patients like this, and the directors are talking." He closed it. A few days later I reopened the abdomen and removed the tumor with ease, and the recovery was uninterrupted. I know from surgical experience and the statements made to me by many of my pupils and by professional friends, that it is really a common occurrence for the visiting staff to make such comments, and they are afraid of one another; and when they go on duty they look up each other's records, and if it has been a clear one, with no mortality, they are careful in the selection of their cases.

As to the administration of anesthetics, the resident physician, with his little duck coat and white trousers, usually sits down without any coaching and without much judgment. We are told that he has passed a competitive examination. This we question very much. He gives an anesthetic to a patient for the first time in the amphitheatre. He sits down, waterlogs the patient, and makes three or four engagements at the same time. The patient has been anesthetized for an hour, perhaps, in an ante-room, and remains under ether from an hour and a half to two or three hours, and I am surprised that any patients so treated ever get well. Anesthesia at the cross-roads is rendered comparatively simple. No matter what the character of the injury may be, the country doctor watches the patient and administers the anesthetic carefully for the surgeon. The surgeon is ready, perhaps, to do the operation before the patient is very deeply anesthetized. The consequence is that both the operation and period of anesthesia are shorter.

I am sorry that Mr. Tait's rule in regard to the administration of anesthetics has not been followed more generally in this country, both in public and private hospitals. We cannot get a physician to assist us in all emergency cases. We commonly have a nurse under our fingers, so to speak. We can generally get a good nurse in every community, either from some private or public institution. In a small town, if there be a good nurse there, she is generally available. If we have a case of version, placenta previa, or a transverse presentation the nurse can generally be had, particularly in good society, and you can start the anesthetic, pull the patient to the side of the bed, and if the nurse is intelligent, if she has had training in a private hospital by a coaching master, she can give the anesthetic for you. If, on the other hand, she has not had training from a coaching master she will depend upon you to watch her, and on the least symptom of approaching danger she will call your attention to it. I depend entirely upon nurses for the administration of anesthetics at home, at Norristown, and at Bryn Mawr. I operate in four German hospitals of a private or semi-private nature at home, on prominent, influential, wealthy people; the nurses give the anesthetic; they are interested in their work; they pay strict attention to it, and there is no meddling on the part of the trustees. They have implicit confidence in those who work for the interests of the hospital.

Reference has been made in regard to how to make money out of private hospitals. We cannot make much money out of them. What Dr. Douglas has said in reference to that matter is true and interesting. The surgeon can hardly make a uniform charge for patients,

for the reason that their financial condition differs greatly. We can fix a uniform charge for rooms and for the services of nurses, but not the operating fee. You can make the latter what it ought to be. I scarcely see how any man can get along by selecting pay patients; I cannot do it. In gynecologic work seventeen out of twenty are charitable patients, but the twentieth, I assure you, is not. She should pay well for the services rendered.

Dr. Douglas's remarks in reference to nurses gossiping about this patient and that one were very interesting to me. My rule is to instruct a nurse that she is to remember that there is only one patient in the house that she knows anything about, and every patient has to feel that she is the only one in the house, so far as attendance, care, etc., are concerned. If you can hold nurses down to that simple rule you will do very well.

POSTRECTAL OR PRESACRAL GROWTHS.

By JAMES F. W. ROSS, M.D.,
TORONTO.

My experience with postrectal tumors (excepting the osteomata) is limited to four cases. They may be given shortly as follows:

Case I.—Mrs. F., aged thirty-five years. Referred to me by Dr. Poole, of Lindsay, on February 22, 1894. Family history: Father and mother living; grandmother died of cancer; no other history of growth in the family; no tubercular history. Patient had two children, last one five years old. Has always had good health. Had some attack of indefinite inflammation in the abdomen as a child. At present suffering from varicose veins in the right leg. Loses blood from hemorrhoids. Suffered from puerperal mania, but made a complete recovery. Menstruation regular; leucorrhea present. Suffers from bearing-down pains at the front of the abdomen and in the sacral region. She is not enlarged over the abdomen and has noticed no lump. Two years ago blood came from the rectum in considerable quantity, so that it "splashed" over everything. The patient thought the blood came from "piles." The pain in the back is of a beating character. It is worse at night.

On examination I found the uterus in front and toward the right side. A mass was to be felt behind the uterus that at first appeared to be in the rectovaginal septum, but on passing the finger into the rectum this mass was determined to be behind the bowel. No fluctuation could be made out. Tumor felt solid, but not hard.

Owing to the fact that the patient's grandmother died of malignant growth and that the patient's color had changed during the last six months, I came to the conclusion that the tumor was in all probability a malignant tumor growing behind the rectum. To determine the exact nature of the neoplasm, however, I advised exploratory operation, and perhaps a puncture of the tumor itself through the rectum or perineum.

April 18, 1894, the abdomen was opened in the median line and the uterus found to be in front of the tumor. Both ovaries and tubes were healthy. There were some few adhesions to the abdominal wall in front. A large mass was found behind the rectum in front of the sacrum. No definite fluctuation could be felt, but the tumor seemed to be of brain-like consistence. Vessels over its surface were very much enlarged, and it was considered inadvisable to attempt its removal. The patient recovered from the operation.

At a subsequent period in the history of the case the relatives became uneasy. A consultation was called and puncture through the rectum advised. I had already carried out puncture by means of the hypodermatic needle and extracted nothing but blood, and satisfied myself that the growth was sarcomatous. However, puncture was carried out by means of a trocar and canula, contrary to my advice, and I was afraid the patient would bleed to death. I have never seen blood pour from a tumor with such rapidity as it did in this instance. It was found necessary to pack the rectum to control the hemorrhage by pressure. The patient recovered and went home. I heard from her and saw her from time to time.

The constipation became more marked, neuralgic or pressure pains became more severe, and it was found necessary at last to draw the urine by catheter. The bladder was drawn up about seven or eight inches. There was no swelling of the limbs. The patient became emaciated and very sallow; she was confined to bed for about three or four months before death ended her sufferings. She died in November, 1896, about two and a half years after the exploratory operation was performed.

CASE II.—Mrs. P., aged twenty-eight years, entered the General Hospital December, 1898; had been married ten years.

On vaginal examination I found a swelling to the left of the uterus. It was indefinite. Examination through the rectum then showed the tumor to be behind and to the left of the rectum. Fluctuation could be noticed. Tumor did not come down far into the pelvis. It was small in size. Advised exploratory operation, and on December 3, 1898, opened the abdomen in the median line and found the ovaries and tubes normal, uterus normal, and the growth rising behind the rectum and the peritoneum to the left of the rectum. Decided that it would be wiser

to tap the growth from below at some future time. From the fluctuation it appeared that the contents were thick and that the tumor might perhaps be a dermoid.

The patient has been seen since. The tumor has not increased in size, and, with the exception of a few neuralgic pains, she suffers but little inconvenience from her condition.

CASE III.—Mrs. B., aged thirty-two years, mother of three children, last of whom is two years old. Never had any miscarriages. Nothing in the family history to assist in making a diagnosis. Menstruation regular. She suffers no particular pain, but feels ill. Appetite poor. Never been well since the last child was born. Complains that the "womb" comes down very much. There is a buzzing noise in the head, and her hearing is at times defective. Feet swell. An examination of the urine determined the presence of chronic nephritis. Suffers from pain in the back, running down the sciatic nerve on the left side.

On examination a tumor was found behind the peritoneum to the left of the rectum, behind the mesorectum. No fluctuation could be made out in the mass. Advised exploration of the growth, and on December 8, 1899, opened the abdomen in the median line. Found tumor behind the rectum. I decided that owing to the patient's condition it was inadvisable to attempt to remove it, and closed the abdomen. The tumor was about the size of an orange. It felt irregular in places, but generally smooth and rounded.

On examination by the rectum, with the fingers of the other hand in the abdominal cavity, the tumor was found to be either in the rectal wall or behind it. Ovaries, tubes, and uterus were found to be in a normal condition. The patient recovered from the operation.

She is still under my care. The tumor has not increased in size. The pressure symptoms are not urgent, but the general condition is not good, owing to the uremic symptoms produced by the chronic nephritis. The tumor behind the rectum is of secondary importance under the circumstances. I feel satisfied that it is not a malignant mass, but that it is very probably a dermoid of slow growth that may have been there for a considerable time, but was not noticed until a thorough examination was instituted.

CASE IV.—Mrs. I., referred to me by Dr. Stevenson, of Tren-

ton, on August 16, 1900. A woman, aged thirty years; has had one child and two miscarriages, the last one three years ago. Menstruation rather frequent, discharge small in quantity. At her confinement there was considerable difficulty, and the doctor then noticed a tumor. She was delivered with instruments.

For three years she has known that she had a tumor, and has been gradually getting stouter over the abdomen. Been troubled very much with constipation. There has also been dysuria.

On examination I found a mass readily rolling about the abdomen and seated on the front of what appeared to be a fluctuating tumor. On vaginal examination a fluctuating mass was found bulging down into the vagina, and on rectal examination this mass was found to be behind the rectum, bulging into the perineum. Distinct fluctuation could be made out from above downward and also laterally. The uterus was found with considerable difficulty, owing to the fact that it was difficult to reach the cervix. The mass before mentioned as moving so readily in front of the tumor proved to be the uterus itself.

On August 17, 1900, I opened the abdomen in the median line. The uterus was found on the top of the tumor, and when the incision, that was made well up toward the umbilicus, was completed one ovary bulged out through the opening. The uterus and both ovaries could be readily lifted out of the abdomen, so that the broad ligaments could be seen in their entirety. I drew these out, so as to demonstrate to those present the laxity of the tissues about the uterus and ovaries. The bladder was drawn high up and would have been incised had not the incision been made well up toward the umbilicus in order to avoid this organ. I decided it was inadvisable to attempt to remove the tumor from the front, and that it should be emptied from below. The abdominal cavity was closed and an incision was then made behind the rectum, extending back to the coccyx. The tumor was readily reached, and grumous material exuded at the first puncture. This had the appearance of the sebaceous material found in dermoid tumors. There was no hair present. The cavity from which this exuded was evidently small, and a second puncture was required, through which nothing but clear watery fluid poured as the tumor collapsed. The finger was passed up and the tumor was found to be intimately connected with the sacrum. I felt satisfied that it

would be impossible to remove it. The prominences of the sacral bones could be felt, with nothing but a very thin covering, about the thickness of the peritoneum, over them. The wall of the tumor was stitched to the skin and the tumor cavity packed with iodoform gauze to produce irritation for the purpose of effecting the closure of the tumor at a later period. The gauze was removed and the tumor sac washed out daily. The abdominal wound healed by first intention. The tumor contents remained as they were in the second cyst cavity at first, namely, clear and watery.

The patient appeared to be making a good recovery until two weeks after the operation, when she began to complain of pain in the limbs and dysuria. These pains subsided, the temperature became elevated, tongue looked brown, and the face assumed the appearance of a person suffering from enteric fever. Delirium came on at night. In deference to the patient's wishes she was removed to her home, and Dr. Stevenson is now in attendance. He looks upon the case as one of enteric fever, according to his last letter. There is no pus to be found anywhere and no evidence of septic infection from the tumor. At first I took it for granted that the infection arose from the tumor contents, but after washing out the sac I was forced to change my opinion. I will be able to report the subsequent progress of the case for publication in the TRANSACTIONS.

It is but a few years since the peritoneum was thought of as a structure of no particular importance to the surgeon, and but half a century has passed since a study of peritonitis was begun. At the present time our knowledge of diseases and growths that invade the interior of the peritoneal cavity is great, and we are able to deal with these conditions in a manner that would appear but little short of marvellous to our ancestors. Now that the diseases and growths affecting the interior of the peritoneal cavity are so well known, it is wise that we should turn our attention to the tissues outside of the peritoneum, or the subperitoneal tissues.

The subperitoneal or preperitoneal tissue is derived from mesoblastic elements lying in front of the spine, and it encircles the great vessels and spreads around the trunk wall, following the vessels to their ultimate destinations in the viscera and to the limbs and other parts of the body. The tissues contain fat in places, and here and there a few bands of unstriped muscular fiber

can be found. The tissue is elastic and areolar, containing lymphatics and lymph spaces.

In the omentum and in the mesentery we sometimes find fat deposited in considerable quantities, and this may also occur in other situations in this subperitoneal tissue. It seems particularly liable to occur in the neighborhood of either one or the other kidney. These growths sometimes attain a large size, weighing from forty to sixty pounds. We have nothing to do in this paper with these growths, but it is well to mention their occurrence when discussing the question of postrectal tumors. These enlargements appear to be more frequent in the female than in the male. They give rise to but few symptoms. The patients apparently "just grow stouter" in the abdomen and become emaciated. They eat and feel well until dyspnea comes on as a consequence of the increase in size. Puncture elicits no fluid, and suppuration may occur at any time and produce fever. There is usually anasarca, beginning at first on the one side and then affecting both limbs. Such enlargements are closely allied to malignant growths, and many of them contain myxomatous or sarcomatous elements.

Their treatment has consisted in some cases of removal. According to Adami's statistics, only twelve cases were successfully removed out of twenty-six operations. The dangers incident upon such an operation are disturbance of the mesenteric vessels, interference with the blood-supply to the intestine, and consequent gangrene. Resection of the intestine has been performed as a consequence of injury to the mesenteric vessels during the removal of such growths, and resections of from a few inches to four feet of intestine have been performed.

In the pelvis fetal relics are to be found in the broad ligaments as the tubules of Kobelt, representing the Wolffian bodies; along the vagina as the duct of Gärtner, representing the Wolffian duct; and over the coccyx as the coccygeal body, representing the postanal gut.

The tissues about the two orifices that are analogous, namely, the mouth and the anus, are really invaginations of the epiblast used in the formation of the stomodeum and proctodeum. It is easy to understand what the postanal gut is if we remember that the proctodeum invaginates to form part of the cloacus and meets the intestine in front of the opening of the neurenteric canal.

There must, therefore, be a portion of the intestine left behind the anus. This gradually disappears and leaves the coccygeal body at the tip of the coccyx.

Anyone who has had experience with branchial cysts and with vaginal cysts must have been struck with certain characters that are similar to both of them. They are sometimes filled with clear fluid, sometimes filled with mucoid material, and sometimes filled with what would appear to be blood that has been retained within a sac wall. Vaginal cysts are, at any rate, of fetal origin, whether they arise from the ducts of Gärtner or not. Vaginal cysts are, of course, postperitoneal tumors, but are not postrectal tumors, so that we will give them no further consideration here. It is my intention to deal only with the neoplasms, and not to take up a consideration of inflammatory conditions of the subperitoneal tissues. They are well understood and readily diagnosticated.

Knowing that embryonic elements lie behind the rectum, and understanding the development of the tissues in this neighborhood, we are able to explain the occurrence of many postrectal or presacral growths. Postrectal tumors are innocent or malignant. The innocent tumors are lipomata, fibromata, myomata, cystomata, enchondromata, osteomata, and dermoid tumors. The malignant tumors are sarcomata or carcinomata.

Innocent Tumors. These tumors do not differ from tumors of a similar nature occurring in other parts of the body.

Enchondromata and osteomata, owing to their fixation, should be made out without much difficulty. I have met with such enlargements, and they have usually been found, during delivery, obstructing labor. They are firmly fixed and cannot be moved.

The lipomatous tumors are difficult to diagnosticate. They must occur with great rarity, owing to the fact that the most usual form of fatty tumor arising from subperitoneal tissue, namely, that found growing from the perirenal fat, is itself extremely rare. Presacral lipomata need, therefore, be merely mentioned. Fibromata and myomata are of particular interest because they simulate malignant growths. An edematous change may take place in either of them. Placed as they are, they are liable to produce death by pressure effects if not removed, and if removed successfully will not recur.

Cystomata fluctuate and frequently grow to considerable size

within a short period of time, and as a consequence they are easily diagnosticated. It is, however, difficult to distinguish between simple cystomata and dermoid cystomata. The contents of the tumor will settle the diagnosis.

Dermoid tumors are not uncommonly found in this region. They occur as frequently in men as in women. Occasionally they bulge freely into the rectum, and long locks of hair will be found protruding through the anus.

The ordinary cysts found are evidently retention cysts produced by a collection of fluid in a connective tissue space. A cystoma, however, is a true tumor in which both walls and contents are new products.

It is well to remember that all retention cysts are very liable to become infected. Any of these innocent tumors may become malignant. The lipomata, fibromata, and myomata may soften, may become indurated, may become calcified, or they may suppurate. The myomatous tumors may soften as a consequence of edema, fatty degeneration, or myxomatous change. Fatty degeneration of a myomatous tumor is a rare occurrence. When myxomatous change takes place the tumors become practically fibrocystic. If calcification occurs the diagnosis will be rendered much more difficult.

MALIGNANT GROWTHS. The form of malignant growth most frequently met with is sarcoma. Sarcoma occurs about the middle period of life. Carcinoma must arise from epithelial elements, and is likely to occur as a secondary deposit in the lymphatic glands as a consequence of the presence of carcinoma elsewhere.

I have seen scirrhus extend behind the rectum. The remains of an old postrectal abscess might be taken for commencing scirrhous growth. I have never met with a primary postrectal carcinoma.

The sarcomata are generally definite, rounded tumors of a brain-like consistence and of slow growth. In the one case occurring in my practice the growth had advanced to considerable dimensions before it was recognized, and the patient lived for about two years and a half after that time.

ETIOLOGY. The cause of the tumors of fetal origin is known. The cause of the other tumors is not known.

SYMPTOMS. The symptoms produced by these tumors will depend upon the size and the nature of the tumor. Enchondroma-

tous and osteomatous growths give rise to no symptoms that point to their presence. They are most frequently discovered for the first time when an examination is instituted for some other trouble.

The other tumors, of both malignant and innocent type, produce constipation. Hemorrhoids may be present, and bleeding from hemorrhoids may draw the patient's attention to the fact that there is something wrong. There is a sense of weight in the pelvis, and eventually pressure pains come on and extend down the sciatic nerve on either one or both sides. Later there is a temporary, evanescent, and sudden loss of power of the limbs. The patient may fall down as a consequence of this and be unable to walk for a short time. She is unable to void urine, and it becomes necessary to remove this by means of a catheter. If the tumor extends high enough up to produce abdominal swelling, this swelling will be noticed. It may be irregular in shape. In the large majority of cases, however, no abdominal swelling will be noticed until after the tumor has been discovered. The patient's attention is usually drawn to her condition by the presence of pain in the pelvis.

It has been stated that there is enlargement of the superficial veins of the abdomen, but this enlargement must only occur after the tumor has attained very considerable dimensions. Cystitis may occur as a consequence of pressure on the bladder. Edema of the extremities may come on. The edema may occur first in the one limb, and, as the growth advances, may occur in the other. Cachexia will be met with in the cases of malignant growth, and will be absent in cases in which the tumors are not malignant.

Diagnosis. The tumor can readily be made out to be behind the rectum. If definite fluctuation occurs it must be a simple cyst or a dermoid cyst. If semi-solid and giving a sense of fluctuation it may be a dermoid. If no true fluctuation is found, and the tumor is very soft and irregular and uneven, we may suspect a lipoma. If of brain-like consistence and without true fluctuation the tumor may be a sarcoma, or a myoma or fibroma that has undergone edematous change. If hard and rounded and smooth it may be myoma or fibroma that has not undergone edematous change. When filled with fluid these postrectal tumors feel very tense. The enchondromata and osteomata will be found fixed to the sacrum and will be rounded and flattened or spike-like.

The intrapelvic organs will be displaced according to the size of the tumor. If large the uterus will be carried away up in front, so that it can be felt moving under the abdominal wall like a pedunculated nodule of a fibroid tumor. The bladder will be much elevated, and may be carried seven or eight inches above its normal position. The rectum will be found to curve upward in front of the tumor, and will lie just behind the uterus or broad ligament, close to the abdominal wall. If the tumor is large a diagnosis of postrectal tumor can easily be made; if small it may be necessary to open the abdomen to make an accurate diagnosis.

The history of the case will help us in coming to a conclusion. If malignant growths have occurred in other members of the family we must be suspicious that the growth under consideration may perhaps also be malignant.

When the abdomen is opened the position of the tumor will be readily ascertained, and such an exploratory incision may assist us in coming to a conclusion as to its nature. A puncture will ascertain the presence or absence of cystic contents. Such punctures should not be made, however, if the contents of the cyst are liable to escape into the abdominal cavity. Even after the abdomen has been opened, and after a trocar has ascertained the fact that the tumor does not contain cystic contents, the diagnosis will still be left in doubt. Even then the tumor may be a fibromatous, myomatous, or sarcomatous growth. This question is an important one to the patient, and it should be decided if possible.

Vessels over the surface of a myoma or fibroma will look just as they do over the surface of a sarcoma. Puncture of either tumor may draw off considerable or but a small quantity of blood. The consistence of each is soft and brain-like if the former are edematous or fatty. If a portion of the tumor could be removed the microscope would soon settle the point, but it is not possible to remove a portion of the tumor without producing hemorrhage. A cutting trocar like a cheese-tester might be of service. On one occasion I removed material with an ear scoop from a melanotic sarcoma of the liver that enabled me to make an accurate diagnosis.

They are all growths that do not invade the adjacent tissues. It has been supposed that the absence of cachexia and apparent good health point to the presence of a non-malignant growth. In the one case of malignant disease recorded above there was distinct

bronzing of the skin. In the three cases of innocent postrectal tumors no such appearance was to be noted.

I believe that the presence or absence of cachexia is of great value to the diagnostician. When we meet with myomatous tumors in other parts of the pelvis we do not see any distinct cachexia affecting the patients. The pain may be more severe and may become more intense at night as a consequence of the presence of sarcomatous growth. This is, however, an indefinite sign upon which to base a positive diagnosis.

PROGNOSIS. The prognosis depends upon the nature of the tumor. Enchondromata and osteomata are not likely to produce death. Small, slowly growing cystic tumors are not likely to produce death, but tumors that advance rapidly ultimately produce a fatal termination from pressure effects. Even with sarcomatous tumors the patients may live for a considerable time.

Sarcomatous tumors, if removed, may recur. The other tumors will not recur if removed.

TREATMENT. The treatment of these tumors requires elaboration. Cysts can be punctured from below and the cyst cavity may be obliterated. Dermoid tumors have been removed through an incision in the perineum. Even though cysts cannot be entirely removed they can be punctured, and the patients can in this way be relieved from the pressure effects. It will scarcely be wise to puncture such cysts from above during the exploratory operation except with a small hypodermatic needle for the purpose of diagnosis. They must either be drained from below, removed from below, or enucleated from above.

Sarcomatous, myomatous, fibromatous, and lipomatous tumors cannot be treated in this way. They must either be left *in situ*, with death staring the patient in the face at some more or less limited period, or they must be removed by enucleation—a very hazardous procedure.

Dr. Douglas, in a paper read before the Southern Surgical and Gynecological Society, 1897, says: "According to Mr. Cripps, retroperitoneal sarcomata do not recur when removed. From a careful investigation of the literature on this subject I think the speaker was very safe in making this assertion, inasmuch as about 95 per cent. of the patients die from the operation or before it."

The mortality of such operations has undoubtedly been great,

but it is difficult as yet to give satisfactory statistics. We may be able to advance along this line, and to improve our technique to such an extent that we may be able to remove these tumors with greater success. Whenever a discussion of the subject has come up in medical societies it has been quite evident that very few of the surgeons present had more than an extremely limited experience with such growths.

The hazard of the operation seems to consist in disturbance of the intestinal circulation. As a consequence gangrene ensues and resection of the intestine is required. If this resection is carried out subsequently to operation it must necessarily be too late. The occurrence of gangrene must be foreseen and dealt with accordingly. All such growths will be found closely related to the great vessels.

If the operator is convinced that the growth is sarcomatous it may be well to leave it alone; but if the growth is of an innocent character it seems sad to think that we must let the patient proceed slowly to certain death without making an effort to save the life.

In many of these cases the diagnosis can rarely be more than a surmise before operation, and even after operation we cannot be satisfied that the tumor is malignant. Small cysts may be left to be dealt with on some subsequent occasion; under such circumstances it is surely unwise to place the patient face to face with immediate death by the performance of a hazardous operation. With modern and surgical appliances resection of the intestine is no longer to be feared as it was a few years ago.

No novice should undertake the removal of a postrectal growth. It can only be done by one who has become familiar with pelvic surgery and who is fully master of the situation. The operator must be full of resource and should be rapid in his movements. He must be thoroughly acquainted with the position occupied by the ureters and large vessels. In making his incision into the abdominal wall he should always remember that the incision should be made high up and enlarged downward after the position of the bladder has been ascertained.

Up to the present time I have had no experience with the removal of such postrectal growths by enucleation from above. I am well aware that many thoughtful, prudent, and daring surgeons do not hesitate to close the abdomen when this condition is met with. Can we not go further and obtain results much more

satisfactory than those obtained in the past? It is necessary to make an accurate diagnosis. Removal of tissue will enable us to do this. Are we not too timid regarding this removal of tissue? If the tumor is innocent and growing it should be removed. Death will ensue if it is not removed. If malignant, operation cannot be so strongly urged. If the tumor is a cyst, causing damage by pressure, it must be emptied, and perhaps both emptied and removed, to effect a cure.

What should the technique of such an operation be? Should we incise the mesorectum close to or far away from the bowel? Should not the incision always be parallel to the vessels and not across them? How are we to accurately determine the situation of the ureters, and, when discovered, how are we to avoid them? How can we best guard against injury to the vessels? In dealing with branchial cysts in the neck I have followed them almost to the spine, but have then left the deep portion of the cyst wall, if it could be called a wall. It seems to me that I would have been forced to deal with the last case I reported of presacral cyst, simulating closely, as it did, a branchial cyst, in exactly the same manner, because the periosteum and so-called cyst wall were so intimately connected. It would not be wise to drain such a cavity into the peritoneal cavity; therefore, it seems to me that it would be wiser to attack such cysts through the postanal tissues, perhaps with removal of the coccyx. The solid tumors should always be attacked from the front.

How are we to foresee gangrene of the intestine? If only the smallest spot of gangrene occurs it will be sufficient to produce death. If we are apprehensive, should we resect the intestine or should we leave it outside of the peritoneal cavity as we do in cases of strangulated hernia? If we resect, how much need we remove? Gangrene of the intestine occurs sometimes upon slight provocation. I have seen gangrene of nearly six feet of small intestine follow the removal of an ovarian tumor. I operated on a man with gangrene of the rectum. The gangrene came on without apparent cause. With these facts before us we feel that there is always danger of gangrene after the immense disturbance of the postrectal tissues incident upon the removal of postrectal tumors.

I beg to leave these few rambling thoughts with the Fellows of this Association as a stimulus for further reflection.

DISCUSSION.

DR. RICHARD DOUGLAS, of Nashville, Tenn.—I have had no experience with the class of tumors dealt with by the essayist, particularly those tumors originating in the true pelvis, but I have met with two cases of retroperitoneal tumors that are interesting and bear some relation to the subject under discussion. One patient presented herself with a tumor, making her abdomen about the size of a full-term pregnancy. The symptoms and signs were those of ordinary uterine fibroma. I made that diagnosis, opened the abdomen, with a view to doing a hysterectomy, and found the uterus, tubes, and ovaries perfectly free, pushed forward and entirely separate from the tumor. The rectum was to the extreme right side of the pelvis. I soon saw from the relations of the tumor that it lay behind the peritoneum, and the rapidity of the growth had led me to think it was in all probability a sarcoma, so I did not attempt its removal. The wound was sewed up, the patient put to bed, and she made an operative recovery. Six weeks after this she developed ascites and died, and I had an opportunity of making a postmortem examination, which revealed a tumor distinctly encapsulated, and I could have removed it without the slightest difficulty during life. Microscopic examination showed it to be a myoma apparently from the psoas muscle.

The other case of retroperitoneal tumor occurred in a man, aged forty-four years, who was six feet seven inches high. He had been in perfect health up to this illness. Four months before I saw him he suffered from intense pain just about the umbilicus. In a short time he noticed a slight swelling in that region. Within a period of four months his abdomen attained enormous dimensions. The physical signs indicated omental tumor, and this diagnosis I made. I urged an exploratory operation. I had little hope of doing anything for him. I opened the abdomen and found the omentum involved. The omentum, when removed, measured fourteen by sixteen inches, about four inches in its greatest thickness, and lay over the intestines, forming a shield over them, and looked exactly like a cherry pie. There were a few adhesions close down to the bladder, which were easily separated.

Underneath the omentum there was a tumor as large as one's head, distinctly fluctuating and elastic, and it lay behind the peritoneum. I aspirated the tumor and drew off considerable light gray fluid, with a slight mucilaginous consistency. Perhaps a quart and

a half of fluid was withdrawn. I packed the sac and drained. I subsequently, from my studies, came to the conclusion that it was a retroperitoneal chylous cyst. The omental disease proved to be sarcoma on microscopic examination, which had existed primarily. I do not know what relation the two bore to each other. The patient did well until the seventh day; he did not have the slightest disturbance; he had a normal pulse and normal temperature. The bowels moved; his tongue was clean. On the morning of the seventh day he was seized with a sudden sharp pain in the abdomen; the stomach became very much swollen; he vomited a bucketful of blood, and died instantly. This is the only experience I have had with retroperitoneal tumors.

Dr. Joseph Price, of Philadelphia.—I cannot recall all of my experience with retroperitoneal tumors. I have two patients under observation with postrectal or retroperitoneal tumors, one of whom is pregnant. She has now reached the fifth or sixth month of pregnancy. After making a careful examination I am inclined to believe that the tumor in this case is malignant. The woman was bleeding freely from the bowel, and the rectal evidence is that of sarcoma. It may be necessary to remove the child by section, at which time an attempt may be made to remove the tumor also.

I am very glad that the essayist favors the exploratory method in determining the precise nature of these growths. In many of them we can determine their precise nature, and Dr. Douglas fortifies that statement by alluding to the case of myoma. I remember some years ago an operator who removed the appendages and hesitated to remove a postperitoneal growth, pelvic in nature. The patient afterward came to me and I made a vaginal enucleation. The enucleation proved to be very easy indeed. The tumor was cystic in nature. It did not require the use of a hemostatic or a ligature. Those operations, however, are not common. It is only occasionally that we meet with a tumor of that nature; they are very rare indeed. Every now and then surgeons cross cases. I remember to have removed a cyst from a patient who had previously been in the hands of another surgeon. This surgeon attempted the removal of a postrectal tumor in a member of the Pepper family, and lost his patient. I believe it was a sarcoma in that case, and in all probability the patient died on the table from hemorrhage.

Rectal and vaginal examinations rarely determine the precise nature of such growths. Operative intervention in post-rectal tumors, not dermoid cysts and myomata, is not difficult. The enucleations are easily made. The tumors are usually small, and can be readily

manipulated. If large, they should be attacked from above. We have much more freedom in operating from above than from below in this class of cases. We can control the field of operation from above when we cannot do so very well from below. It is always much easier to control hemorrhage from above.

Dr. Douglas takes the same view that I do in regard to this class of tumors.

Recently a patient came to me with appendicitis, but I had some doubt about it. She had travelled a great distance, and after a careful examination and operation I discovered she had a healthy appendix. I made a high incision, so that I could explore the upper part of the abdomen, and found a small tumor in the hilus of the kidney, with bowel adhesions. The growth was about the size of a black walnut. I extended my incision, freed the bowel, feeling that I had a stone in the hilus of the kidney. I determined to save the kidney and close the hilus. I, therefore, freed the foreign body from the hilus of the kidney, which was a large gallstone, closed the gall-bladder, and drained.

Dr. A. Goldspohn, of Chicago.—I have not had any experience with retroperitoneal abdominal tumors, but the remarks of Dr. Price in reference to pelvic retroperitoneal tumors reminds me of a case where a midwife and several general practitioners found a condition in a patient in labor at term that they could not comprehend. After this a capable obstetrician saw the case, and discovered that there was a tumor filling the pelvis and the presenting part of the child was high up. It could not enter the true pelvis at all. He thought he could crowd the tumor aside and deliver by version, and in his endeavor to do this he ruptured the cyst, the fluid not coming outward but escaping upward through the peritoneum, which was the upper layer of the broad ligament, into the abdomen. After this there was room, and the child was delivered without difficulty. The escape of this fluid into the abdominal cavity had no perceptible effect clinically upon the patient's after-course. There was no unusual rise of temperature or evidence of peritonitis. The fluid was harmless. The patient recovered, passed through a normal puerperium, but three or four months later the tumor refilled and then she was brought to me. She had a lacerated perineum. It was a broad ligament cyst, pretty well down, and I thought it was a nice case to see what could be done by way of the vagina. According to German literature, it is rare to attack broad ligament cysts through the vagina. However, in this case it was quite accessible. There were not more than two ligatures used; several points were clamped with forceps temporarily, and the

whole cavity packed with gauze. It contracted, and subsequently she made a nice recovery.

Dr. A. Vander Veer, of Albany, N. Y.—I am very sorry not to have heard the paper of Dr. Ross, because the subject of retroperitoneal tumors is one to which I have given a good deal of attention. A few years ago I published an article on the subject, and up to that time I went over it very thoroughly. As has been said, we do not know just what is in the abdominal cavity, and we come in contact with retroperitoneal tumors everywhere. We find the kidney sometimes down in the pelvis. We find a variety of retroperitoneal tumors. My first operation was done as far back as 1879. I had a case of solid tumor of the broad ligament, and I removed it through the vagina with excellent results. These cases are exceedingly rare. I have done this operation a few times since.

There is one point I wish to emphasize in reference to retroperitoneal tumors situated in any part of the abdomen, namely, we must be sure to control hemorrhage. We must be absolutely sure that drainage is correct. It is a class of tumors that we must not worry over when we come in contact with a tumor that is apparently in the peritoneal cavity and find it is not. Doubtless many of you remember the excellent paper of Jonathan Hutchinson, which was published a number of years ago, before very much abdominal surgery was done, as to the origin of these tumors and the possibility of a simple tumor becoming sarcomatous. I would just as soon go in from above and remove these tumors as to attack them through the vagina, and with the patient in the Trendelenburg position I am more sure than to go through the vagina and work with my fingers instead of working with my eyesight.

Dr. Edwin Ricketts, of Cincinnati, Ohio.—I have two cases under observation, in one of whom I have refused to operate on the ground of malignancy. As to the other I am not quite sure of my diagnosis. In this case no decision has been arrived at as to what will be done. I am quite sure, in the case on which I refused to operate, that had an attempt been made to remove the tumor the patient would have died on the table, and that, of course, is a serious complication. I have not made up my mind as to what I shall do with the other case, a woman, aged twenty-eight years.

THE LIGATURE AND VALUE OF DRY STERILIZED CATGUT.

By J. H. CARSTENS, M.D.,
DETROIT.

Ever since Ambroise Paré employed the ligature to tie blood-vessels the profession has used many different materials for that purpose. Every imaginable substance has been tried and cast aside, again picked up, and then again discarded. For many years surgery was limited to external parts of the body where ligatures could be reached, after healing had taken place, and be removed. Finally, the profession found that silk was the best for that purpose, and so for the first half of the nineteenth century virtually only silk was used. During the last quarter of that century, with the advent of abdominal surgery, requiring the ligature to be buried and be beyond reach after the external wound had healed, the trouble began. Silk was a foreign body and would often cause fistulæ, and the profession looked around for other material, and even used various metals, but they were generally found wanting. Then it tried animal ligatures of various kinds. The greatest trouble with these has been to make them absolutely sterile. Every kind of animal tissue, from the tail of the kangaroo to the fascia lata of the deer, has been used and again dropped. Through the work of Marcy the profession has come to use kangaroo tendon, and I myself have done a great deal to introduce it, and six years ago read a paper before this Association on the subject. I have had splendid results with it in many cases, but sometimes I found it septic and to last too long in the tissues.

The mode of preparation and keeping it in oil never suited me, so I finally prepared some myself and kept it in alcohol. But I found another thing, and that was that the kangaroo tendon in a great many cases would not be absorbed and would remain dor-

mant in the tissues for weeks and months, and finally soften and liquefy, forming a so-called cold abscess, perfectly sterile, but still causing a great deal of trouble, especially mental. Some of these abscesses would not be sterile. They would become infected months after through the blood, and then would cause very serious trouble indeed.

I have tried the different kinds of catgut ligature—koumolized, formaldehyded, and chromicized—and have always found something wrong. The great objection that I have to all these ligatures is that they *last too long.*

It seems absurd to hear men talking about using twenty-day, thirty-day, or forty-day catgut, as though it made any difference whether it lasted ten days, twenty days, or two months. If the parts are not *healed* in a few days or a week they will not heal in a month if you simply hold them in apposition with the ligature. When I have taken out pieces of ligatures weeks and months after an operation I have become disgusted with various materials.

Yet catgut is the ideal ligature in abdominal surgery. Again and again I have approached the subject and experimented, but have as often become discouraged. Reverdin, Dœderlein, and others recommended dry sterilized catgut, but I knew of no good method of preparing it until I heard some years ago of the dry sterilized catgut as prepared by Boerckmann. The only thing that I did not like was to use oiled paper or paraffin paper for the purpose of oiling the ligature. That is just what I did not want in a ligature. What I wanted was a *plain, pure animal fiber,* as small as possible, or as fine and as light as possible, to hold the parts in apposition for a few days or to control a blood-vessel.

After I had sterilized some I was astonished to find how strong the catgut was after being subjected to an intense heat. First using heavy, I began to use it lighter and lighter, and finally got down to No. 3 of the finest German catgut. This I used for tying the pedicle and bloodvessels, and it is more than strong enough for that purpose. For fine work—that is, intestinal surgery or to sew the peritoneum together—I use only No. 1 or No. 0. For instance, in operating for appendicitis either is amply sufficient in strength, as agglutination of the peritoneum takes place so rapidly.

I prepare these ligatures myself (although they are now in the market) in the following manner: The catgut is put in ether for a few days or a week, until the fat is all removed, and then cut in pieces eighteen inches long. Three of these are wrapped in fine tissue-paper. This is then placed in a small envelope, the latter closed, and then placed in the Boerckmann sterilizer and subjected to dry heat for three hours. The thermometer is kept in the apparatus, so that you can see that the heat is at least 300°. At the expiration of that time the heat is shut off, and the ligatures remain in the apparatus without disturbance for twelve to eighteen hours, which gives any spores that may be present an opportunity to develop. Then the heat is again used, and the ligatures are subjected to another 300°.

The ligatures are now sterile. They are in the envelope and can be carried in a satchel. When ready for use the end of the envelope can be torn off and the ligature with the tissue-paper be dropped into alcohol, the tissue-paper removed, and the ligature can be threaded and used. They are not slippery and greasy, as is catgut prepared with oil. The knot never slips, and can be firmly tied without danger of opening. They soften and liquefy, and are absorbed in a week or ten days if they are not contaminated by the use of septic material.

No contamination can take place while they are in the envelope unless the envelope becomes moist. I have had a package in my satchel which I carried all over Europe, and whenever anybody wanted to try it I gave them a couple of envelopes. The envelopes were loose, came in contact with all kinds of things, but were kept dry, and when I returned I made bacteriological tests and found that the catgut was still absolutely sterile.

I have repeatedly tested this catgut and have always found it absolutely sterile. I have prepared kangaroo tendon in the same way and found it efficacious, but, as a rule, it lasts too long, and as the fibres are not smooth or of even thickness, nor long, I have for a couple of years entirely discarded the kangaroo tendon and have only used catgut.

Such a thing as a fistula I have not seen during this time, except in cases operated upon by others where silk was used, and especially in cases of appendicitis.

What I want to plead for especially is that in septic cases

requiring a ligature no silk should be used, as a fistula nearly always ensues and remains until the silk is removed. If catgut is used it holds the vessels and the tissues in place a sufficient length of time, but it dissolves and washes away with the discharge, and, as there is no foreign substance left, the wound heals.

I consider this the most important point of all. When it comes to closing the abdominal incision, however, in septic cases, then I use the *en masse* figure-of-eight silkworm-gut suture. By septic cases I understand not only pus cases, but also tubercular and malignant growths. In absolutely sterile cases I, of course, use catgut, and then also use the same material for closing the abdominal incision, using the fine No. 1 catgut to close the peritoneum, the No. 3 to close the fascia and muscle, and again the No. 1 to close the skin. I use a simple over-and-over suture for the latter purpose, and do not have that dread of the staphylococcus albus which I formerly did.

I have covered the wound with a kaolin paste, which absorbs any secretion and still protects the wound from postoperative infection.

Stitch abscesses—yes, I have them occasionally in one or the other corner of the wound, but they do not contaminate the whole incision if taken in time and opened. Herniæ I have not seen so far following this method of closing the incision, although I have operated on several hundred cases. Still, the time—two years for the longest—has not been sufficient to demonstrate the value. However, I strengthen the suture by one or two strips of rubber adhesive plaster, which takes off the strain during the retching and vomiting following the operation and supports the parts when the patients get up, which they generally do in ten or twelve days. I remove this plaster before the patient leaves the hospital and apply a fresh one, which is allowed to remain until it gets loose —that is, three or four weeks—by which time I think the parts are as strong as they ever will be. In fact, Morris has shown that in sixteen to twenty days after union the tissues are about as strong as they were before.

All this is written for experienced surgeons. A beginner had better start with silk. The latter is, as a rule, best in general surgery where asepsis cannot be carried out so well—that is, emergency cases and the like.

The points I want to make about the dry sterilized catgut ligatures are the following:

1. All buried sutures ought to be absorbable.
2. All absorbable sutures must be absolutely sterile.
3. Chemicalized sutures are no more sterile than plain sutures.
4. A suture that is chemicalized is harder and remains longer in the tissues.
5. The latter is no advantage, but a disadvantage. If, in a special case, it is desirable that a suture should remain longer, dry sterilized kangaroo tendon can be used.

DISCUSSION.

DR. A. GOLDSPOHN, of Chicago.—Mr. President: I quite agree with Dr. Carstens in regard to the undesirability of many-day catgut. It is not rational. It is not necessary. I have no use for chromicized gut, although I do use formaldehyde gut, which is also hardened and lasts longer than this gut, but not as long as chromicized gut.

The method of dry sterilization which Dr. Carstens presents is substantially that of Boeckmann, with some slight modification. Boeckmann's method is practically that of some German whose name I cannot recall. At any rate, the method is not original with anyone in America. The conclusions arrived at as to dry sterilization were that to make the catgut sterile it is necessary to subject it to nearly 300° F. for several hours; and to preserve its tensile strength these investigators declared that it was necessary to apply this high degree of temperature gradually and also to withdraw it gradually.

It was found that this method was the most conducive to the tensile strength and stability of the catgut. The fractional sterilization which Dr. Carstens attempts in a heat of 300° F. for a shorter period in each of several successive days is undoubtedly correct as far as the principle is concerned, and it is what has been done in every laboratory in order to achieve sterilization of its dishes and culture media; but it remains to be proved whether the tensile strength of the catgut will be as good as when it is prepared after the original directions of Boeckmann and his predecessor. I worked with the Boeckmann catgut exclusively for six months—that is, put up in envelopes like this, but the results were not as good as I had expected. Since then I

have been using formalized gut, boiled in water for twenty minutes. Whether there is any difference in the degree of sterility of the gut itself I do not know. But there is an advantage in using gut taken directly out of an antiseptic fluid and not simply dried out by the air.

In operating the gut is fingered by some assistants and by the operator himself. In this and other ways many slight contaminations occur. This is one of the weak spots in surgery. We try to correct it by wearing rubber gloves, but only partially succeed in doing so. Let the gut be ever so sterile it may become contaminated by various contacts of a doubtful nature. If it is embedded in antiseptic liquid the contamination imparted in its use will be offset partly by the germicide present, and the presence of the germicide is not a detriment to the tissues as a rule. So I still adhere substantially to the Hofmeister method of preparation of hardening in formalin, not depending upon the formalin to effect sterilization, but simply to harden it, so that it will stand boiling in water, because boiling in water is the germicide of the highest known potentiality. A combination of heat and water moisture is the only unequalled sterilizing factor. The gut can then be kept on its spools of glass tubing in alcohol with corrosive sublimate added.

For use in a hospital where it need never be carried out of the sterilizing or operating room, it is wound upon sections of heavy glass tubing an inch in diameter and about six inches long. Upon these it is formalized, deformalized, and boiled. One such spool of each required size of gut is placed by itself in a slender glass-stoppered bottle. While operating the glass stoppers are removed from the bottles which contain the required sizes of gut, and a membrane of sterilized gauze in several layers is fastened over the open mouth of each of these bottles, and the loose end of the gut is drawn through this gauze cover, which holds it conveniently accessible, while only a small end of it is exposed to possible contamination, and any desired length can be rapidly drawn out of the sublimate alcohol in which the spool stands on end and allows of unwinding without a hitch. For purposes where it must be carried I have it wound on much smaller spools, of which a sufficient number are carried in a glass-covered jar in 1 : 1000 sublimate alcohol.

Dr. D. Tod Gilliam, of Columbus, Ohio.—I wish to thank Dr. Carstens for his paper this morning on catgut. I have been casting around for something that is satisfactory in the way of catgut for some time. I have been afraid to use it as ordinarily prepared by moist preparation for ligature purposes. I have been using catgut prepared after the manner indicated by Dr. Goldspohn in my hospital work

for a good while, but it has not been entirely satisfactory. I have sometimes had bad results from abscesses. Another thing is the catgut will swell more or less, and in doing so the meshes become separated and the strand becomes weakened. It becomes soft and yielding without elasticity, and as a ligature material it gives more or less, and the knot is not so likely to hold. Beside, it is an uncomfortable thing to deal with. The dry sterilized catgut as here presented is very different. You can use this catgut with as much facility as you can a piece of silkworm-gut, and it is pliable enough so that you can send the knot home. After you have applied the catgut the subsequent swelling which takes place from the imbibition of the moisture from the tissues will be beneficial. It will tighten the gut as a ligature.

My son visited Detroit a few days ago and saw some of the work of Dr. Carstens, and he came back very enthusiastic over his catgut as well as his technique. I have since been anxious to see some of it. The catgut he has tested here today shows a great deal of tensile strength as compared with the size of the gut, and when I go home I shall use dry sterilized catgut as here shown.

Dr. John B. Deaver, of Philadelphia.—I have listened to Dr. Carstens's paper with a good deal of interest, but cannot agree with him in reference to the use of catgut. There are objections to the use of koumol catgut, juniper-oil gut, or, for that matter, any form of catgut. It is not always reliable.

I never use anything but silk in the abdominal cavity. I could not be persuaded to use catgut alone as ligature or suture material. I never use anything but silk in my goiter operations, and I can truthfully and conscientiously say that I have not seen any bad results following its use. With all deference to Dr. Carstens, I have found catgut prepared after his method not to be any too strong and very stiff. The latter objection I would make against koumol gut as well. The want of pliability makes the likelihood of hemorrhage greater, as the second knot cannot be as secure as when tying with a pliable ligature.

Dr. Hall.—Do you use silk in all of your hernia operations?

Dr. Deaver.—Not in all.

Dr. Jelks.—Do you use formalin catgut?

Dr. Deaver.—No.

Dr. Hall.—In gonorrheal pus cases, where you may have contaminated the field of operation, which operators sometimes do, would you use silk in the pedicle or catgut?

Dr. Deaver.—Silk.

DR. CARSTENS.—Supposing you had a case of appendicitis and should tie off the appendix, would you use silk or catgut?

DR. DEAVER.—I do not tie off the appendix in but exceptional cases; I have relegated that practice to the past long since.

DR. CARSTENS.—Well, supposing you have to tie bloodvessels, what would you use?

DR. DEAVER.—Silk.

DR. EDWIN RICKETTS, of Cincinnati, Ohio.—I have listened with a great deal of pleasure to what has been said in regard to catgut ligatures. As many of the objections have been largely theoretical, I want to speak from a practical stand-point. But before doing so I desire to say that dry sterilization is going back to what was taught by the late Mr. Tait. The dryer the ligatures the better the chance for success. I must say that I prefer the use of silk. Catgut requires the use of a larger needle, and this is a very important point. In a Bassini operation silk will do better, for the reason that you can use a smaller-sized needle than it is possible to employ when you use catgut. From a surgical stand-point, I do not see why unnecessary time should be taken in the preparation of a ligature. Dr. Carstens made the statement that one operator claimed that after eighteen days the wound was as solid as it ever was. If the wound is solid at the end of eighteen days, what is the use of having a buried ligature after the eighteenth day?

DR. CARSTENS.—That is just what I said.

DR. RICKETTS (resuming).—I have seen a Bassini operation in which the finest silk was used, and the results were beautiful. In the use of ligatures there is a tendency to be more or less careless, and if we will persist in trying to keep it clean and dry it will serve us much better nine times out of ten than any ligature material that has been brought forward. When I say silk I mean silk. I do not mean silk that has cotton in it. If you will examine your silk and find that it is free from cotton, and take the same pains in regard to its examination that you do with catgut, you will have eliminated the greatest objection to silk. Be sure that you have pure silk, and you will not be disappointed.

DR. JAMES T. JELKS, of Hot Springs, Ark.—My experience is similar to that of Drs. Deaver and Price. I have become dissatisfied with dry sterilized catgut, but have been more satisfied with formalin catgut. By preparing catgut in a 3 per cent. formalin solution you can boil it as often as you please. Recently I have been using catgut, boiling it in a hot saturated solution of sulphate of ammonia, and have had no reason to complain of it. I have not been using it more

than six months. The point I make is that you can boil it daily and it does not hurt it. It does not swell in water any more than silk would. It does not injure its tensile strength. If you will soak the catgut in ether a few days, and then boil it in a hot saturated solution of sulphate of ammonia, you will have no trouble with it.

DR. CHARLES GREENE CUMSTON, of Boston.—Unfortunately I did not hear the paper of Dr. Carstens, but I have used dry sterilized catgut during the last two years, and have had no trouble with it. The use of chromicized gut is bad. I have had cases where this gut was used for buried sutures in the abdominal wall, and patients have come to me five or six months after operation and the gut has come out; it was as large as when I put it in. So I have no further use for chromicized catgut.

Dr. Ricketts mentioned an important point in speaking of silk, namely, that we ought to know what kind of silk we are using. I prefer the finest French silk because it is very strong. The Lyons silk as I buy it is absolutely pure. It is not dyed or bleached. When you get it it is a sort of light yellow. It is very stiff, but by boiling it is extremely flexible when you use it. I have always used it as a ligature material in *aseptic cases*, and have never had any trouble from it. I have used silk in a large number of cases, and was educated to employ it. Before I began to practice in Boston I never saw a strand of catgut. We kept our silk soaked in a sublimate solution. At the end of a fortnight it would get very rotten and had to be renewed. I have never seen any better results from the use of silk than what I saw in the practice of Kocher, of Berne. Up to 1893, at the time I left Switzerland, I believe that Kocher never used anything but silk, and he has a very large clinical service.

With reference to the use of dry catgut, I can assure you it is far superior to the formalin gut which I have given a fair trial. I have used it for over a year. Chromicized gut will often give trouble. In short, fine silk and dry sterilized gut are the only two ligature materials I use.

DR. CARSTENS (closing the discussion).—There is very little to add to what has already been said. No. 3 catgut is just as strong as silk, in my opinion, and it is just about the same size. You can use as small a needle for it as you can for silk. In septic cases we ought to use catgut which will liquefy, which is soft and comes away with the discharge, because we do not want the catgut to hold more than thirty-six or forty-eight hours.

Dr. Deaver has told us that he sometimes cuts his hand with catgut. I used to cut mine also, but I do not do so any more. The

principal question is, Is the gut sterile? If it is there can be no objection to it. Is it strong enough to hold as a ligature? I say it is.

With reference to secondary hemorrhage—yes; I have it just as everybody else does once in a while. I think I had a case of secondary hemorrhage last year. But it makes no difference whether we use silk or catgut we may be a little careless in tying the ligature; hence it slips, and hemorrhage may take place, so that part of it is just the same, no matter what ligature material we use. I want to say to my friend Deaver that I know of cases following operations for appendicitis in which a little discharge has kept up for months and years, and simply due to the use of silk.

DR. DEAVER.—That is because the appendix has not been taken out.

DR. PRICE.—Do you close your appendicitis operations?

DR. CARSTENS.—Usually I do an internal operation. When I perform the open operation I use *en masse* silkworm-gut.

What I simply plead for is a ligature which will absorb quickly. If you use it to sew up the abdominal incision, and it is absolutely sterile, the patients will get along smoothly, and it will not cause trouble afterward. I ask you to give it a fair trial, and I am sure you will not be prejudiced against it. I have tried it over and over again. I have changed my mind half a dozen times in regard to ligatures. Next year I may appear before you with something else. I may have found something better, but if you will give this catgut a fair trial I am sure you will like it.

SOME CONTRAINDICATIONS TO INTRAPERITONEAL USE OF NORMAL SALT SOLUTION AFTER ABDOMINAL SECTION.

By FRANK F. SIMPSON, M.D.,
PITTSBURG.

THE merits of normal salt solution have received such widespread and mature consideration that this subject hardly permits of further discussion. The especial advantages of the various ways of using it have also been made so clear and concise that but little remains to be said. The intraperitoneal use following abdominal section, though empirical in its inception, has been put upon a scientific basis by careful experiments. The growing favor of this method, elaborated by Dr. John G. Clark and those with whom he has been intimately associated, is an eloquent tribute to its value and to the men who have shown how simple, easy, and efficacious it is.

Yet it is not capable of universal application, for under some conditions it is unnecessary, under others it is positively harmful. The contraindications should, therefore, be clearly defined, in order that it may not fall into disfavor because of an improper application of the principles involved. The advocates of this method tell us that the chief advantages of normal salt solution *thus applied* are that culture media and bacteria are more rapidly absorbed; that they are thus got rid of before growing numbers and increasing quantity suffice to endanger life; and that drainage of this kind is not fraught with the dangers of external contamination. Were these conditions always possible this would constitute the ideal method of drainage. While it is applicable to the vast majority of cases, there are two conspicuous and important exceptions. They have been alluded to by Dr. Clark, but I think they need to be emphasized.

The first class embraces those cases (such as ovarian and uterine neoplasms) in which ascites is present at the time of operation, and is in itself direct evidence that absorption of fluids from the peritoneal cavity must at best be slow, if indeed it occurs at all. If not absorbed, fluids put into the abdominal cavity lose their value and become foreign substances. Hence they are objectionable. Two cases of this kind have come under my observation. One became infected and was for a time in a critical condition; the other was not inconvenienced, though she left the hospital with considerable fluid in the abdominal cavity.

The next class embraces the most important cases in the whole domain of medicine and surgery—important because of their great frequency, because of the wide range of age from which victims are claimed, because of the frightful mortality that quickly supervenes, and because of the exquisite suffering from which death mercifully releases these patients.

The cases referred to are those in which enormous doses of bacterial poisons are suddenly poured into the peritoneal cavity by rupture of abscesses (pelvic, appendicial, hepatic, etc.) or of the hollow viscera, caused by accident or disease.

I think it is generally conceded that death from peritonitis is caused not by the local lesion, but by the bacteria and bacterial poisons that gain entrance to the circulation and thence reach the vital centers. In the cases alluded to the pinched features, the cold, purple extremities, and the small, rapid, feeble pulse show too plainly that the poison in the individual case is most virulent. Desperate chances are taken when we wait that long if the diagnosis is certain. When the abdomen is opened and ounces of this fluid are found to be present it seems most irrational that anything should be done to favor its continued absorption, yet this is the action for which peritoneal infusions of normal salt solution are chiefly lauded. In these cases it is as positively contraindicated as the administration of fats and oils in phosphorus poisoning.

It is hardly fair to refer to the defects of a procedure without presenting an alternative which seems to have greater merit. I have thus assailed an established method of treatment because, like those of you to whom I have the honor of speaking, I have felt keenly the impotence we must all confess when confronted by this most fatal of afflictions. In the remarks which follow you will

doubtless find much that is elementary; but we can well afford to revert to first principles when considering a disease which is almost always fatal if the patient is not relieved by operation; a disease for the relief of which the operative procedures in vogue, until quite recently, could offer but little more hope. The condition referred to is not that of visceral adhesions without pus or bacteria; is not that of pus confined in natural cavities; is not that of abscesses walled off by lymph and adhesions; but the condition which is found soon after one of the hollow viscera or an abscess has ruptured and its contents have been poured into the free abdominal cavity. The essential constituents of the material from the ruptured cavity are effete substances in various stages of decomposition, bacteria, and bacterial poisons. Nature quickly adds considerable fluid poured out from serous surfaces. We thus find an indefinite quantity of a deadly poison free in a cavity whose walls absorb such fluids with avidity. But, what is worse, conditions exist for the rapid and continuous production of more poison. The principles underlying the treatment of this condition are the same as those for strychnine or other poisoning where absorption from the stomach is progressive: administer physiologic antidotes, retard absorption, speedily remove the remaining poison by the simplest and safest method, guard against further administration on the one hand and production on the other, provide for its immediate removal when it reaches an absorbing surface. The difficulty comes in the application of these principles to surgical cases. I believe it possible. I believe that the day is not far distant when success can be predicted with the confidence we feel when referring to a simple hysterectomy for fibroid. Brief allusion to some observations and experiments of others and to some observations and experiments of my own will make my views more clear.

Dr. John G. Clark has called attention to the facts determined by Muscatello and others:

1. That absorption of substances by the peritoneum is most rapid, and chiefly through the diaphragm.

2. That pigment put into the pelvis of dogs reaches the mediastinal glands within a few minutes if the dog be suspended with its head downward.

3. Conversely, that absorption is very much less rapid if the dog is in the reverse position, some hours being required.

In other words, the pelvic peritoneum absorbs and distributes slowly.

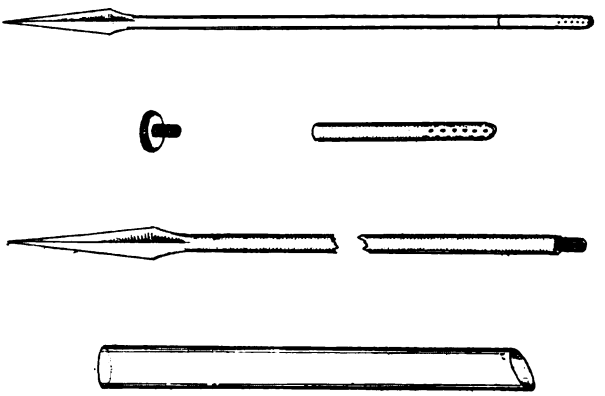
Dr. Clark's method of internal drainage has done much, in his hands and in the hands of other competent men, to verify the accuracy of the foregoing conclusions.

If absorption can be hastened by Clark's position it can be retarded by the reverse position if the lesion is below the umbilicus. The reasons are twofold. Not only does the pelvic peritoneum absorp slowly, but the area of the absorbing surface is materially reduced by elevation of the trunk and depression of the pelvis. A moment's reflection will recall the fact that there is a shallow depression—the subrenal fossa—on both sides of the spinal column. When the human body is in dorsal decubitus a small amount of fluid can come in contact with an extensive area of peritoneum. Elevate the head and trunk, and this fluid drains into the more globular pelvis. The parietal and visceral contact surfaces are both diminished. Dr. Fowler's recent report of nine consecutive recoveries of serious cases treated by this posture, tends to show that there is an element of truth in this theory. A case of our own, treated by that posture one month before Dr. Fowler's first case, and for the same reasons, is in accord with this theory, to say the least. This case is mentioned here not to detract from the value of Dr. Fowler's work, but to give it support by adding one more successful result.

Some months ago it occurred to me that the favorable termination in our case might in part have been due to the supposition that the bacterial poisons were not readily absorbed because of the presence of ascites, and the underlying fact that fluid was passing from the tissues into the peritoneal cavity, not from that cavity into the lymph and blood channels; further, that the presence of fluid usually found in cases of peritonitis may be the result of a conservative effort on the part of nature, designed to retard absorption. The questions naturally presented themselves: Is it possible to produce an artificial ascites? If so, will that retard the absorption of bacterial poisons? Is it possible to so adjust treatment that, practically, neither absorption nor effusion will occur? Further, is it possible to neutralize these bacterial poisons chemically, so that if absorbed they will be inert? I do not refer to germicides, but to bland chemical antidotes. With the kind and valuable

assistance of Mr. Cunningham, of the Pittsburg City Laboratory, an effort was made to solve some of these problems. Forty-five guinea-pigs were experimented upon. In this work glycerin was used because of its well-known hygroscopic action. Diphtheritic toxin was used as a type of bacterial poisons. It was selected because of the accuracy with which fatal doses are habitually determined in that laboratory. In each group of experiments in which it was used the fact that a lethal dose was employed was determined by control tests.

FIG. 1.[1]



It was clearly demonstrated that a small amount of glycerin was capable of causing a free flow of fluid into that cavity (3 c.mm. caused as much as 25 c.cm. to be poured out).

More than half the pigs were given glycerin only, in order to determine whether or not effusion always followed its use. It did.

Large injections, equivalent to two-thirds of a liter of pure glycerin in a man of one hundred and fifty pounds, were followed by the death of several pigs within periods varying from one to two hours. At autopsy an enormous amount of fluid was found in the abdominal cavities. Corresponding amounts in a man of one hundred and fifty pounds would vary from two to ten liters. The rapid withdrawal of this large quantity of fluid from the body is quite sufficient to cause death quickly.

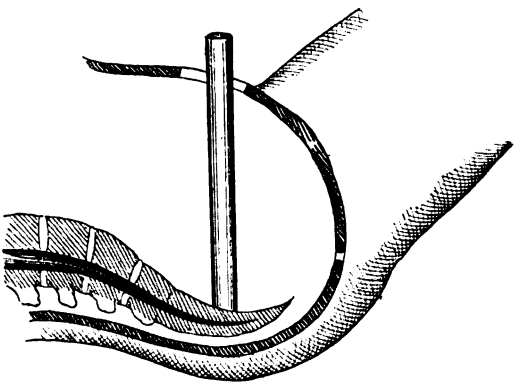
When much glycerin and a fatal dose of toxin were injected and allowed to remain death was hastened.

[1] Very satisfactory instruments of this kind are made by the Kny-Scheerer Company, of New York.

When glycerin and a fatal dose of toxin were injected, and the pigs were tapped about three hours later, death was retarded in the pigs from which only about one-fourth the effusion was withdrawn, while two, from which perhaps two-thirds of the fluid was drawn off, recovered permanently. I am convinced that their lives were saved by this method of treatment.

No effort has been made to answer the last two questions, nor has the peritoneum been examined microscopically to determine whether it was injured by the glycerin. No gross lesions were found.

FIG. 2.



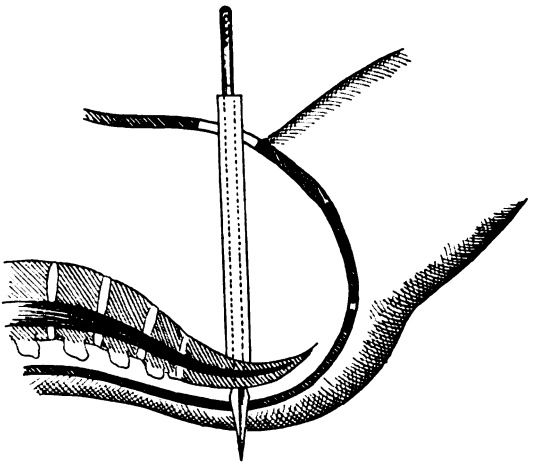
Showing protecting tube passed through the abdominal incision and placed in accurate contact with the pelvic wall at the lowest part of the pelvic cavity. Its object is to give a safe passageway for a sharp instrument, which can be quickly thrust through it.

Our experiments have not been in sufficient numbers, nor is our interpretation of results of sufficient accuracy, to warrant final conclusions for a working plan. They do suffice, however, to convince me, at least, that the theory upon which they were based contains a germ of truth. Whether or not it can be practically applied remains to be seen. This matter is presented in the rough because I am aware that one man seldom perfects any method of treatment, and because I hope that others may be induced to investigate this theory and to adapt it to the needs of these pitiable cases.

The speedy and efficient removal of fluids from the peritoneal cavity is all the more a requisite of success if this method be employed. If, because of a very large amount of septic matter, the abdomen must be flushed, it can best be done by using dependent drainage. Very simple experiments on the cadaver will show that

the objectionable features of flushing have not all been eliminated. I have repeatedly poured several ounces of fecal matter into the abdominal cavity at autopsy and attempted to wash it out through a five-inch median abdominal incision. The cavity was not cleansed in this way, though quarts of water were used. Flakes were widely distributed. You have all seen this. By making free, dependent

FIG. 3.

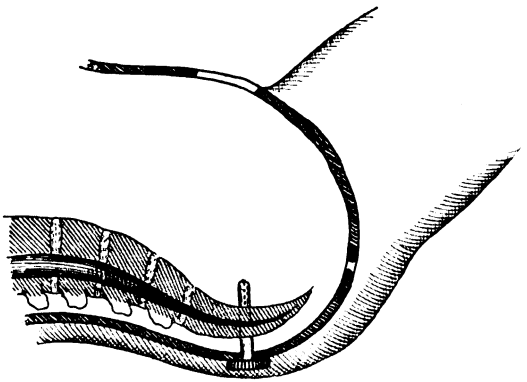


Showing protecting tube in position and perforator penetrating dependent portion of pelvic wall.

drainage, however, and repeating this process, including the introduction of the same quantity of fecal matter as before, the cavity was made far cleaner. By using little at a time the first water contained the fecal matter; the balance came clear. It may be objected that this condition does not exist in actual practice. I grant that it does not after days of peritonitis; but where operation has been done early, and those are the cases alluded to, the conditions are identical. I believe that divergent views regarding drainage are dependent rather upon the question of expediency than differences as to principle. Dependent drainage, properly applied, should carry off fluids more quickly than any other method, for the law of gravity applies with as great force here as elsewhere in surgery, as elsewhere in nature. The question of expediency is of paramount importance when the patient's desperate condition demands speedy action. Our criterion should be efficiency. Present methods of treating this condition are sadly de-

ficient in this respect. Others should be tried. If dependent drainage be superior in any class of cases it must surely be so here, for life, not comfort, depends upon efficiency. Thus far it has been effected with difficulty, delay, and danger of seriously injuring abdominal viscera. I believe these difficulties can be easily overcome by passing a plain metallic tube through the abdominal incision down to the most dependent part of the pelvic floor, where it is held in accurate contact with the pelvic wall. A sharp, spear-shaped piece of metal, carrying a detachable drainage canal at its blunt end, can be quickly thrust through this tube and the pelvic wall without fear of serious damage. It may be said that this is all right in theory, but that in practice it cannot be

FIG. 4.



Showing drainage-tube (which was attached to blunt end of perforator), left in position after removal of protecting tube and perforator.

effected. That seems to me to be a confession of weakness. The distinguishing feature of superior men is their ability to overcome unusual difficulties. The silent appeal of the thousands who have gone down to untimely graves because present methods did not suffice to relieve them urges you to greater achievements. I have sufficient confidence in the future of our profession to believe that by concerted and determined effort new and effective measures will be devised. Truly marvellous results will then be a possibility of the near future.

It seems to me that nowhere else in surgery is the element of time so large a factor in determining results. Indecision as to the method to adopt often causes delay. We should map out our

course definitely before operation and execute it as speedily as effective work will permit.

A word as to anesthetics. Few, if any, surgeons would countenance the administration of chloroform or ether if the patient had taken an indefinite quantity of aconite and gave marked evidence of its absorption. Why should they be employed in these cases, where we know a large amount of a poison quite as depressing and deadly has been absorbed?

DISCUSSION.

Dr. Joseph Price, of Philadelphia.—Mr. President: This is the best paper I have ever heard on this subject, and I am delighted to notice that one of the younger Fellows of the Association has seen fit to discuss this subject from an experimental stand-point. He could not have introduced a more important topic for our consideration. These cases are numerous, and altogether they are the most trying, most distressing, most complicated class of patients we have to deal with. We have present a number of men who have contributed valuable articles on this subject, and sometimes they were subjected to recrimination. I have heard them abused roundly. I remember very well years ago that if a man dared to report a case of angry, suppurative peritonitis which he had saved he was called a liar and denounced as untruthful in his statement. A number of prominent teachers in this country did not hesitate to denounce men who reported such cases as untruthful.

Up to the time of Dr. Douglas's famous paper it was commonly said that these cases could not be saved, and, if I remember rightly, Dr. Douglas in his paper reported at least 50 per cent. of recoveries in a class of cases that had heretofore been considered absolutely hopeless. This paper today is one of the cleanest presentations we have had for a long time along the line of drainage. Again, most of these cases have been saved by toilets, drainage, or by arresting infection speedily. When we get an earnest scientific appeal to arrest infection by any possible method it invites us to consider the subject seriously. I can remember when I was very much abused for draining, and a few of us stood alone in the practice of drainage; but we saved patients who had committed criminal abortions, others who had vicious forms of peritonitis following all sorts of criminal practices, and only recently I saved a case of criminal abortion which I think

was done by a lima-bean pole. You could easily look through the uterus and see the vagina. There was no difficulty in placing a gauze drain by pushing it down through the fundus of the uterus. There was a cluster of bowel with figures-of-eight and S's, the adhesions being well organized; but even in the midst of filth and infection the bowel was freed and repaired. The woman had all the symptoms of collapse, but by both a wet and dry toilet and copious dressings we arrested infection speedily and saved her life. Some of you will say that the application of this drain is peculiar, but I assure you it is easy, and I would not hesitate to place it. The presence of the drain before the trocar is used will be recognized very easily by the external finger on one or the other side of the coccyx.

The vaginal route for suppurative forms of peritonitis simply consists of draining a local zone. The anterior lymph spaces are as much involved as the posterior. The route recommended in this paper favors the opening of both spaces by a punctured wound far removed from the lymphatics. The broad lymphatic zones are easily infected by broad ligament incisions and punctures. The route favors also the drainage of all viscera and the areas of infection. Altogether it is the best suggestion of through-and-through drainage that has ever been made.

Some operators who have used a wet toilet have gone back to salt solution, and I am satisfied their mortality with salt solution has been much higher. It would have been much lower if they had clung to dry toilets.

Dr. Richard Douglas, of Nashville, Tenn.—Speaking specifically of dry toilets, I will say that I have had nine cases of gunshot wounds of the abdomen treated by irrigation, leaving a quantity of fluid in the cavity. Two of the patients recovered and seven died. In two months I had another series of seven cases of gunshot wounds of the abdomen, treated simply by wiping out the cavity, leaving no fluid in it whatever, and six of the patients recovered. These cases are reported in the *Journal of the American Medical Association.*

Dr. J. Henry Carstens, of Detroit, Mich.—The question of salt solution I have solved in my own mind in the same way as has Dr. Price. Formerly I flushed and drained after the manner he mentioned, and gradually in the process of time I flushed less and less, so that finally I do not flush any more. I thought I could operate on appendicitis just as well as anyone else could ten years ago, but today I do not think I can, for the reason I have less patients die than I did formerly. Now, I wipe out the cavity; I do not drain. If I have fluid in there I would wash the septic material into the abdominal cavity. If the

case is septic and fluid is left in the cavity I am afraid of contamination. If the fluid is washed all around the cavity I do not know where it will be deposited, but if I keep the abdomen dry there will be agglutination.

When I think it is necessary to drain I now do so by the vaginal route. I puncture the posterior cul-de-sac. I open up all these spaces, so that I am not afraid of them. I do not think these spaces are any worse than the lymph spaces around the abdominal incision where the tube is inserted, and I know it drains well there. Sometimes we get a part of the septic material walled in. With the use of a glass tube the intestines will become adherent around it. Careful experiments in reference to peritoneal drainage have been made in Germany and also with peritoneal fluids. They have introduced anilin dyes and various other substances into the peritoneal cavity, and it has been found that no matter where you put it all the fluids in the peritoneum will eventually gravitate into the posterior cul-de-sac, and this, in my opinion, is the place to drain.

DR. EDWIN WALKER, of Evansville, Ind.—I am especially gratified to hear this paper and the discussion on it. At our meeting held at Niagara Falls I advocated this method. I do all of my surgery by the absolutely dry method. I do not use any fluid at all. I do not moisten my sponges. I wipe out the peritoneal cavity dry, and I have been doing this for nearly eight years. I wrote an article on this subject in 1896, advocating dry surgery, and read it before the Indiana State Medical Society. Since then I have been wiping out the peritoneum dry. This discussion corresponds entirely with my own experience. I lost a larger proportion of cases after flushing with salt solution, consequently I was prompted to adopt the dry method.

DR. PRICE.—Do you use drainage after flushing?

DR. WALKER.—I did a number of years ago, but I do not now.

DR. A. GOLDSPOHN, of Chicago.—I am always very much pleased at every effort I see in scientific experimental work in this country, which is calculated to give us a foundation on which to base our practice. This subject has a scientific bearing, and such experimental work as has been detailed, and that which has been referred to by Dr. Carstens as having been done in Germany, is what we need to give us a rule for action and stop the empirical work that has not a scientific bottom. I am also pleased to see the argument which the doctor's experiments advance, showing the serious effects, if not the erroneousness, of general abdominal flushing and the use of salt solution in the peritoneal cavity. Decidedly much better results are obtained now than formerly. It seems now that we are pretty much agreed on dry

surgery. I do not want anything but dry gauze sponges, and I throw them away and do not use them the second time. The results Dr. Douglas spoke of are very gratifying, showing that he pursued the proper course.

Dr. Price.—I do not wish to be understood by the Fellows as having abandoned wet toilets, nor must you understand that where they are practised the peritoneal cavity is not wet. The author of the paper has called attention to quantities of fluid in this cavity. You have many times in your experience met with large quantities of muddy fluid, filth, débris of every character, and lymph which you have irrigated and removed either from the pelvic basin or iliac fossa. In wetting the peritoneal cavity we dilute the virulent nature of the fluids which exist there. The man who uses gauze during an operation does a drainage operation. It is just a question whether he prolongs that drainage or not, and the man who prolongs drainage or does dry surgery is the man who gets the best results. Washing out filthy, muddy fluid does not mean wet surgery at all, no matter whether we use salt solution, distilled or boiled water.

To go back to one of the best surgeons in our work in Germany—Martin. He reports seventy-two suppurative pelvic cases in which he resorted to puncture of the vaginal vault either with scissors or forceps and inserted a vaginal drain, with thirteen deaths. None of you would care to repeat the work of Martin.

Dr. Simpson (closing the discussion).—I shall say but a few words with reference to the employment of dependent drainage. An attempt has been made to present a method which combines the advantages given by gravity, with speed, ease, and safety of application. It is a very simple matter to pass a smooth, metallic tube through an abdominal incision to the bottom of the pelvis. It is easy for those accustomed to intra-abdominal manipulations to place the end of the tube in accurate contact with the pelvic wall, and to know that no important structures lie between. The security given by holding the tube firmly against that wall enables one to quickly thrust a perforator down through the tube and out through the pelvic floor. The perforator is detached from the permanent drainage-tube, allowing one end to project into the pelvic cavity, while the other is secured in the dressings outside. The advantages of dependent drainage are obvious; its application easy. I think it will be especially serviceable in those cases in which a large quantity of a virulent poison has suddenly gained entrance into a peritoneal cavity free from adhesions. Its value is materially increased when used in connection with Fowler's position.

SIMPLE METHODS IN PELVIC SURGERY.

By JOHN B. DEAVER, M.D.,
PHILADELPHIA.

Simplicity is the *sine qua non* of good surgery. The fully developed, well-rounded surgeon can be recognized by the manner in which he performs his operations. He depends upon skill and applied knowledge rather than upon instruments, for there is no instrument or mechanical device which can replace or equal perfected manual dexterity. When one sees a great array of instruments and mechanical appliances in the operating-room, one of two things can justly be suspected—either the surgeon is capable, but has little confidence in himself for the particular operation to be performed, or he is incapable. Every surgeon is constantly striving to reduce his technique to the simplest possible form, until he feels capable of performing operations of magnitude with so few instruments that he may go to an operation with his kit in his coat pocket, as one of my friends has cleverly put it, or, like my friend Price, with so few instruments that he can carry them in one of his vest pockets.

Simplicity means safety, surety, confidence, neatness, and a great saving of time, which is an essential factor in the success of many operations.

In pelvic surgery there are several methods by which the above-mentioned desirable factors may be accomplished. It is my intention to bring them to your notice, with the reasons why they are used and the purposes accomplished.

The abdominal route is by far the more rational, and, therefore, the best way of approaching an operation on the pelvic organs in a large proportion of cases, and offers several advantages that render it preferable to the vaginal:

1. It is simpler of performance.

2. It is safer, as one can avoid distributing infection where infected areas are present.

3. It reduces the danger of general peritonitis by use of gauze packing.

4. It renders injuries to the bowel, ureters, important blood-vessels, and adherent organs less likely to occur.

5. It minimizes the danger of hemorrhage.

6. It aids generally by the facility offered for inspection. Through the abdominal incision the surgeon is able to open the abdomen to the proximal side of the infected area, when, by the proper disposition of sterile gauze sheets, practically all risk of peritoneal contamination is done away with.

7. It enables the surgeon to operate with a very few instruments.

In many cases of pelvic disease there will be encountered an infected area, or infected areas, through which the surgeon must work if he chooses the vaginal route. Through the abdominal incision he is able, in the majority of instances, to avoid trespassing upon the infected area until he is prepared to attack it, and thus render the spread of infection very much less liable.

One of the greatest advantages of the abdominal route in simplifying pelvic manipulation is by the use of the Trendelenburg position in certain cases. I would not have you understand that I employ it in all abdominal cases; far from it. By using this position two great objects are accomplished, viz., reduced possibility of spreading infection and the opportunity of seeing, if need be, what one is doing. With the bowels out of the way by means of this position, and then retention by gauze packing, infection is reduced to a minimum. The simplicity of a pelvic operation when one can view the condition has only to be seen to be realized. Let us, for example, take a bad case of pyosalpinx with adherent bowel, omentum, etc.—yes, everything in the pelvis apparently tied up into one solid mass—and then try to enucleate and excise by the sense of touch, be it ever so highly developed, and I am sure that the mortality and the morbidity of such operations will be higher than when the same manual dexterity is aided by the sense of sight. I know of but comparatively few operations upon the pelvis which cannot be better performed in less time and with more satisfactory results by the aid of the Trendelenburg position and gauze packing.

The number of instruments needed is very few; one-half dozen hemostats, knife, scissors, tissue forceps, pedicle needle and ligatures, and needle and sutures are all that are required for the most extensive operation. The whole success depends upon the skill of the operator and his opportunity of inspecting from time to time the field of operation.

It has been said that all things go in cycles—fashions, ideas, politics, religion, etc.—and along with these must be classed surgical instruments and ideas. For example, we have the angiotribe—an antediluvian, antiquated, useless, and dangerous instrument, which should be relegated to the realms of barbaric surgery. Why anyone should go back to such an instrument, in the light of the twentieth century surgery, is an unexplained condition of cycling which should be classed with the "young ideas learning how to shoot."

Radical operations per vaginam are, with few exceptions, I think, to be discountenanced for several good and sound reasons:

1. The limited area for manipulation.
2. The impossibility of inspection without destruction and removal of the uterus, which should not be removed except for disease of that organ itself.
3. The marked increased liability to hemorrhage, both primary and secondary.
4. Increased danger of injuring ureters, bowel, bladder, and large bloodvessels.
5. Danger of doing incomplete surgery.
6. Inability to repair satisfactorily injuries to bowel or bladder.
7. Inability to deal safely with an inflammatory mass which involves the vermiform appendix.

I believe it good practice to remove the appendix, when having the abdomen open for other reasons, if it can be done without added risk to the patient, as I know that every human being who is without an appendix has a better chance in the struggle for existence than one who is menaced by the treacherous and touchy little organ. The abdominal route offers the chance, and the vaginal does not, for I have never heard of a vaginal route advocate who claims that advantage for the method.

Not all cases of pelvic inflammatory disease have their origin in the uterine adnexa. A percentage originate in the appendix, the

pelvic organs becoming infected secondarily, as I have seen time and again. This is particularly so where the terminal portion of the organ occupies the pelvis. What surgeon can deal with this condition safely and ideally by the vaginal route?

DISCUSSION.

DR. A. VANDER VEER, of Albany, N. Y.—Mr. President: This paper is short and pointed, and I wish to indorse fully Dr. Deaver's views in regard to the abdominal route. With reference to operations upon the broad ligaments, the appendages, and the uterus, which we sometimes save, I have met with so many cases of diseased tube on the right side, complicated with appendicitis, that I feel sometimes uncertain as to whether or not we have that complication more frequently than we suspect, and I will defy anyone to reach and deal with this complication through the vagina with any degree of satisfaction or comfort.

As to the operation of vaginal hysterectomy, I do not agree with what Dr. Deaver has said in reference to the use of the angiotribe. Its use in removing the uterus is of great value at the present time. I have used it in a number of cases. Dr. Macdonald has used it some forty-five times without any embarrassment as regards hemorrhage or other complications. I can do a vaginal hysterectomy with the aid of this instrument much quicker than I can by any other method I have tried, and with a greater degree of satisfaction, leaving the wound to heal in a few days. So I disagree with Dr. Deaver in regard to the use of that instrument. As these discussions are reported and go into print it behooves us to be very guarded in making statements. Very many of the younger men of the profession, who read these papers and discussions, will be influenced either one way or the other. I dislike to hear dogmatic or positive assertions.

With reference to instruments, the fewer we use in our operations the better. Once upon a time I knew a surgeon who, in doing an operation, presented a great array of instruments. It was simply enormous, but his patient died in less than twenty-four hours after the operation. But when the bill was presented the friends of the patient resisted the somewhat exorbitant price, and the doctor with great emphasis said: "Why, I had at that operation six hundred dollars' worth of instruments."

DR. L. H. DUNNING, of Indianapolis, Ind.—It seems to have been

my lot to disagree with the essayist on every occasion in which I have been called upon to speak. However, I have been highly entertained by his paper, and I agree heartily with very much that has been said. I cannot agree with the bold and sweeping statement that, in every instance, the abdominal route is the better one through which to attack suppurative diseases within the pelvis. On many occasions I have stated my firm belief in this regard before this and other associations, and that in the vaginal route we have a means of attacking cases in which there is an acute suppurative process in progress, or in which there is a large abscess bulging into the vagina, and were we to operate from above it would entail great danger to the patient, while in operating from below there would be very little danger indeed. Six or seven years ago I reported fifty cases operated upon by the vaginal method without the necessity of a secondary operation. I have now to say that I have resorted to vaginal incision over one hundred times for large pelvic abscesses during the acute stage or progress of the disease, and have had but a single death from that operation, and have been compelled to do a secondary operation but twice. I doubt if Dr. Deaver or any other man can show as long a list of severe cases with as few deaths when the operation has been done by the abdominal route. These patients have recovered their health. A considerable number of them have borne children afterward. This experience has extended over a period of twenty years. It really grieves me to hear a man make such a bold and sweeping statement as the essayist did in condemning such a measure.

A woman, aged sixty-two years, presented herself with a pelvic abscess. She was acutely and violently ill; the abscess bulged into the vagina. She was much emaciated. Abdominal section would be exceedingly dangerous in such a case. The abscess was very large, reaching almost to the umbilicus. A large and free incision was made through the vagina, she made an excellent recovery, and is in good health today.

This is one of many cases that are coming under our observation continually, and I do not believe we ought to let it go out from this Association that such cases should be attacked by the abdominal route. It is dangerous to do it. The mortality of operations upon the acute cases is from 15 to 25 per cent. when done from above; when done from below it is 2 to 3 per cent., and the secondary operations do not amount to more than 2 or 3 per cent. So, I hold that this is the measure we should adopt.

Dr. Lewis S. McMurtry, of Louisville.—We have heard the remarks of a man who writes, as it were, with his apron on and his hands

scrubbed. The principles that underlie cannot be questioned. I can readily see how in a brief paper, such as the essayist has presented, many statements made might be easily misconstrued. When Dr. Deaver closes the discussion I think he will say that Dr. Dunning has entirely misconstrued his remarks in one particular. I am sure that Dr. Deaver would treat the case that Dr. Dunning related just as Dr. Dunning did. The results of vaginal puncture in acute cases, such as were described, are very satisfactory; but in the chronic cases they are unsatisfactory. I am sure the essayist was laying down general principles that are to be applied with reasonable exceptions in individual cases, and there cannot be any aphorisms made in surgery without doing that. At the same time the general principle stands out, that the difference between surgery done by the suprapubic route and surgery performed by the vaginal route is this, that in one case we can see what we are doing, and consequently we have the advantage of precision and accuracy, while in the other instance the work is done almost blindly. Through the abdominal route surgeons can inspect the pelvic organs, bring them into view, and see what to do. When, however, we have cases requiring difficult work, and everything is matted together and agglutinated, the area which is open to inspection by the operator through vaginal incision is very limited. By the abdominal route we are able to look over the field; we know what the conditions are and what they will be in the next forty-eight hours. The essayist emphasizes one point—that is the comparatively common complication of the appendix in suppurative diseases of the uterine appendages. The appendix is one of the pelvic organs that is implicated in many instances, and it is one of which we can have no knowledge from operations done by the vaginal route.

It is not my purpose to carry this interesting subject into the comparative advantages of abdominal section and vaginal section, because the subject has been gone over so thoroughly in this and other societies that it would be like bringing up some old contest anew. Most of us are pretty well agreed as to the merits of the two methods of operating, although we will find here and there enthusiasts who favor one route to the exclusion of the other; and that brings me to say that there are two ways, oftentimes, of doing the same thing. What may be the best way for one man to do a thing may not be the best way for another. If a surgeon by long experience at the operating-table has a method of which he is a master, that particular method in his hands will yield better results than if he were to adopt a method which, in some respects, may be more direct or easier, but which he has not mastered.

Dr. Vander Veer has talked about the introduction of novelties in surgical practice. I suppose that most of us are familiar with the history of the écraseur of Chassaignac, which, when introduced, was pictured in all works on surgery, and was considered to be the method of hemostasis which would supersede the ligature. The pedicles of tumors were removed with the écraseur. Since Ambroise Paré discovered the ligature there has been a great number of things introduced to take its place, but I know of nothing as good or as satisfactory as the ligature. I do not see in the angiotribe anything but doing rapidly the same thing that the écraseur did less rapidly. I am in favor of giving everything that is introduced a fair and thorough trial, but I believe that we will progress most rapidly by deliberation. Of novelties introduced into surgical practice, many attract enthusiasm, but few remain permanent contributions to surgery.

The great apostle of simplicity in surgery in this country is out distinguished Fellow—Dr. Price. Those who have visited his clinic have seen him take instruments in one hand and do a complicated operation. His operations are precise, accurate, and finished. Dr. Deaver is an exponent of the same school in surgery. When the ligature is placed on a pus-tube, for example, and a portion of the cheesy, degenerated tissue is left as a stump, is it the proper thing to say that the ligature produces all the trouble that obtains in that case after the operation? If you remove the large tube and remove the pedicle by the angiotribe or anything else, would you not have trouble from the stump you have left behind? Suppose all diseased tissue is taken out and the ligature placed in sound tissues all will be well. The same thing obtains in reference to the appendix. If all of the necrotic and degenerated tissue is removed and the suture placed in healthy tissue, there will be no subsequent eruption and sinus.

Dr. Joseph Price, of Philadelphia.—We have not time to go into the history of vaginal operations. You are all familiar with the fact that vaginal puncture was freely practised not by sharp instruments but by caustics—B.C. 410—by Hippocrates, and in those days you will remember that if the uterus protruded they placed mice and roaches on it so that it would recede, or, where there were abscesses, leaving the organ capable of locomotion. While many of our friends advocate the method of Hippocrates, I do not think they would use mice or roaches to deal with a protruded uterus at the present time.

The allusions to the angiotribe may have been made because it was suggestive of the future of the patient. I am satisfied that if some of the gentlemen present would give us a frank statement of their personal experience with the use of this instrument, those who are disposed

to go home and use it will not do so, although many lives may have been saved by it.

Allusions have been made to involvement of the appendix. You will remember Dr. Kelly, who is a very slick pelvic operator. I once said to him: "Kelly, I am sorry that you are practising the vaginal route; your position and work are entirely too important; you have too many visitors, and you are placing a dangerous method in the hands of those who have neither experience nor judgment, and that operations from above would be equally successful in your hands if you were blindfolded." You will doubtless recall that he reported thirty-seven cases of vaginal puncture, with one death, in three of which it became necessary to do a celiotomy subsequently. He lost one case. In two cases he repeated the operation a third time; in two a second time, owing to imperfect surgery by this route.

When I heard of the death of our distinguished friend, Dr. Hunter McGuire, I was very deeply touched. He belonged to that grand old school of surgeons to which Briggs and Agnew formed a part. They lived with us in all of our practice. They were more or less progressive, but you know very well that many of the old surgeons were non-progressive; they soured on the younger generation of surgeons and on everything progressive. Nothing is more lamentable to us than the loss of such men as Agnew, Briggs, McGuire, and others. During a discussion in Richmond, Virginia, on anesthetics, McGuire asked me to take a ride with him to the Lee Monument. I did so, and he then took me to his hospital to examine a couple of patients. In a discussion that afternoon I made the remark that I would rather spend a week in jail than to operate upon the two neglected cases I had seen. Both of them had been punctured by McGuire, and considerable collections of fluid withdrawn. The patients were very ill, feeble, and greatly emaciated. They were carried into the examining-room for me to see them. Three or four months after vaginal puncture they partially recovered and returned to their homes in North Carolina. They returned for a second puncture, but one of them refused it. McGuire turned the case over to me to do what I thought was best for the woman. I operated, and enucleated a large ovarian abscess which stood almost erect, notwithstanding its contents were removed, and she made a nice recovery. Her condition was not promising. The walls of the abscess were hard and parchment-like, and so rigid that they stood alone without collapsing after evacuating the fluid. She had a fecal fistula, but eventually she got well.

I have digressed a little because I neglected to finish my allusion to the work of Dr. Kelly. Of 200 cases, Dr. Kelly reports 25 per cent.

in which there was involvement of the appendix after adopting the vaginal route in dealing with suppurative forms of disease. He says recently in his pelvic researches that the appendix is involved in tubo-ovarian disease in twenty-five cases out of 200. I think you will find an account of this published in the *Transactions of the American Gynecological Society* for last year. Personally, I have found the appendix involved in 69 per cent. of the cases of suppurative forms of pelvic disease, and have removed it. I have many of these appendices with the ovaries and tubes in bottles.

A few words more in reference to the use of the angiotribe. Recently a prominent veterinarian castrated five colts for me and lost two with the angiotribe. It distressed me sufficiently to say to him: "I hope you will give up this business; you have no right to do it."

The acute cases of suppurative forms of tubal and ovarian disease are plain and easy as compared with the old chronic and sadly neglected cases. The infection is less virulent. These cases make speedy recoveries. In that class of cases, Mr. Tait said, if a complete operation is done they nearly all get well.

Dr. Dunning refers to a class of cases in which he evacuates large quantities of pus, and the patients improve. Let us take a hundred of such cases with large puriform collections and resort to vaginal puncture, as he does, and they will nearly all improve temporarily, but sooner or later the abscess cavity refills, as in the case I referred to which McGuire punctured. As a matter of fact, in nearly all of these cases the sac refills. Dr. Dunning is right when he says that were we to do an extensive enucleation and repair the bowel, if need be, the patient might die on the table. But he is not through with the patient. The records of such cases do not fortify the position he has taken. Such patients have old disorganized sacs which he or some other surgeon must re-evacuate or remove. Such incomplete surgery has cost many a good man his position in a good hospital. I now operate for a hospital simply because a member of the visiting staff resorted to puncture in a few of these cases the first, second, and even a third time. This man lost his position because of imperfect, incomplete work. I insist that vaginal puncture is not complete surgery. It is not to be compared for a moment to the surgery that Deaver does.

Dr. L. H. Dunning, of Indianapolis, Ind.—I have noticed that Dr. Price uses the word puncture. I do not believe he intentionally uses it in the treatment of the class of cases under discussion. I am willing to admit that after puncture we have a rapid refilling, but if we make a large incision, introduce the finger, and break down all

walls of tissue, find the pocket, then pack and drain, this refilling does not occur, and many of the patients get well and do not require a secondary operation.

Dr. J. Henry Carstens, of Detroit, Mich.—The paper of Dr. Deaver has been very interesting to me. It is near to my heart. For a long time I have been preaching about simplicity of operations. The fewer instruments we use in our operations the better. When I tell physicians that I operate on cases of appendicitis with two catch forceps, a dressing forceps, scissors, needle, and knife they say: "How can you do it?" I tell them that it is not necessary to use so many instruments.

There was one point brought out in the discussion that interested me very much, namely, having a nurse to thread the needles and handle the ligatures and perhaps contaminate them. I thread all my needles myself; I have them fixed and ready; I have the tray by my side, and nobody handles the instruments except myself. When I want a certain kind of forceps, before the nurse or assistant can find it, I have found it myself, have done the work, and am through with it. I do not need any assistants for this purpose.

I want to deprecate the tendency of some men to belittle all innovations. Now, there are innovations and suggestions for new things that are practical, and it seems absolutely ridiculous to condemn anything before giving them a fair trial. We ought to give a new method or a new instrument a fair trial before we condemn it. I do not think we ought to condemn it before using it. The angiotribe, for instance, is an instrument which I do not believe is applicable for every case, but I do think there are certain specific cases where it can be used to great advantage. Vaginal puncture is a good thing, Dr. Price to the contrary notwithstanding. To illustrate: I am called to see a case a hundred miles in the country; the woman has been in bed ten weeks or more. She has a pus-tube, with a temperature of 103° to 104°. She is as white as a sheet; her pulse is 120 or 130. She is debilitated and run down. She has no power of resistance. Shall I go to work, cut down, and remove that pus-tube and do perfect surgery? No. If I did so the probabilities are that she would die on the table, or at least in about six or eight hours after the operation. In such a case I would resort to puncture through the posterior cul-de-sac, let out the pus, wash out the cavity, drain, and put the woman back to bed. In a short time she has a clean tongue; in two or three weeks her red blood-corpuscles have increased wonderfully; she has the power now to resist microbic infection. In short, she is now in such a condition that she can be taken to the hospital and undergo a complete opera-

tion for the removal of the pus-tube, and her life is saved. Nobody can make me believe that this is bad surgery. It is good surgery. If I am afraid to let the woman alone and not operate it is a different thing altogether. Then I am a coward. But I must do something. I do not believe in repeated vaginal punctures. That is bad practice; it is not good surgery.

I want to make the point that we should deprecate the tendency on the part of some surgeons to ignore or treat lightly new things. If I did not try these new things or new methods where would I be? I would have moss growing on my back; I would be an old fossil. Where would any of you be today if you were not innovaters? Dr. Price would be in the same position today that he was twenty years ago, when he began to practice, if he had not adopted new methods. But he started on a new field. He had the courage of his convictions. He worked in the right direction. I do not wish any of you to be old fossils, and say that you are not going to try the angiotribe or use this or that catgut. I want you to try these things before condemning them. If, after experience with them, you find that they are no good you should not hesitate to condemn them.

DR. A. GOLDSPOHN, of Chicago.—I take it that a discussion on vaginal puncture and drainage is out of order, and that according to the title of Dr. Deaver's paper we are to consider the removal of a part or the whole of the genitalia in cases of intrapelvic disease, or that we are to do conservative work in the absence of pus. The question of the vaginal or abdominal route cannot be decided in such a positive and dogmatic manner as Dr. Deaver has spoken. If we have such a positive declaration on one side it certainly demands an equally positive protest on the other, which I enter now, not that I take an extreme view as regards the abdominal route, because I have practised both methods within reasonable limits. So far as the good to patients is concerned, there can be no question by any fair gynecologist regarding the results which we obtain by thorough and complete operations by the abdomen, and I am speaking now of cases in which we have an infection in a part of the organs but can save the uterus with or without a part of the appendages. The question arises, Shall we attack these cases from above or below? Thorough work should be uppermost in our minds. If we can do thorough work through the vagina it is our duty to do so, even if it is not quite so easily done as from above. I am not in accord with those operators who choose the easiest route for themselves to accomplish a certain end, whether it be for the best interests of the patient or not. It is not becoming a good surgeon to do this. First of all, he should have the interests of his

patient in view, and be willing to sacrifice his own convenience. He should take a few minutes more in operating when needed for her good.

That much of the work under discussion can be done through the vagina I can abundantly vouch for. I speak from actual experience. The question resolves itself into this: Shall the uterus be removed or not? Some operators say that when the appendages are removed the uterus should be taken away also, for the reason that it is a useless organ and a menace. I do not go so far. My experience of ten years in dealing with this class of cases teaches me that the uterus should be removed in about one-half of the cases where the appendages are removed, but in the other half the organ had better remain; *provided*, that we do our duty to the condition and position of the uterus minus its appendages. This means a thorough curetment, rather an attempt to extirpate the endometrium, as the first act in the operation in those cases where we intend to leave the uterus.

Again, I have no sympathy with the idea of opening the abdomen before making a diagnosis. In a reasonable number of cases we can make a diagnosis before doing this, and say whether the uterus shall be removed or saved. If it is to be saved operate from above. We can do much more nearly ideal conservative work on the adnexæ by this route, and the patients will recover a better degree of health. But if the uterus is to go, an operation by the vagina should be the rule with few exceptions.

Dr. Deaver (closing the discussion).—I do not wish to detain the Association with any lengthy closing remarks. Dr. McMurtry has interpreted my ideas. For the benefit of some of those who have taken part in the discussion, and who seem to have misconstrued some of the points brought out, I will say that I tried to convey the idea that the abdominal route in the vast majority of cases is preferable to the vaginal. In certain cases of carcinoma of the fundus I would remove the uterus through the vagina. I open the vaginal vault and evacuate a large collection of pus in some cases, but to call that a complete operation is absolutely and radically wrong. That is what I object to. It is wrong to talk about curing patients by puncturing the roof of the vagina for pelvic abscess or a pelvic inflammatory mass and evacuating simply its contents. We cannot effect a cure by this method either by the vagina or the abdomen.

With reference to the use of the angiotribe, my friend, Dr. Vander Veer, has used it successfully in selected cases. In all probability in that class of cases Dr. Price, Dr. Dunning, or myself, with two or three hemostatic forceps, could accomplish the same results.

I believe with Dr. Carstens that we should not decry everything that is new until we have given it a fair trial. We should give our individual experience.

I take exception to the remarks of those who speak of vaginal puncture and dignify it as an operation.

THE TREATMENT OF FIBROIDS IN THE NON-PREGNANT UTERUS.

By E. F. FISH, M.D.,
MILWAUKEE.

KELLY tells us in his work, *Operative Gynecology*, that "the great majority of myomatous uteri require no treatment whatever." Penrose says that "the great majority of fibroid tumors of the uterus demand immediate operation," while Tod Gilliam shows us how a tumor as large as a seventh month of gestation may spontaneously vanish. Perhaps, indeed, it is a serious question whether all fibroids of the non-pregnant uterus should be operated on as soon as discovered. Perhaps this will be answered in the negative, but certainly all fibroids productive of symptoms demand attention. When we consider the great losses of blood, the menorrhagias and metrorrhagias, the consequent anemia and cachexia, the heart lesions, the fatty livers and diseased kidneys so common with fibromata, and the liability to a malignant degeneration, are we not forced to consider the advisability of early interference? I therefore venture to assert that whenever uterine fibromata are productive of symptoms—pain, pressure, hemorrhage, constitutional impairment—radical treatment should be instituted unless there is some grave contraindication, such as chronic nephritis, diabetes, tuberculosis, etc. Having decided upon a radical measure, shall we enucleate the growth or remove the uterus?

MYOMECTOMY. Theoretically myomectomy is the most preferable way of handling fibroids; in fact, it seems to be the operation of choice under favorable conditions. Although writers and operators differ as to its limits and advisability, my present belief is that it is applicable in all cases when the tumor is pedunculated, and often when subserous, interstitial, or submucous; but where several exist, when sessile or much uterine tissue must be sacrificed, notwithstanding Kelly, who has removed thirty tumors from one uterus, leaving it in good condition, or Polk, who stops

only when he no longer can close the tumor cavity and cover the wound with peritoneum, the liability to infection is greater and the operation takes longer in the hands of ordinary operators than hysterectomy. Myomectomy, too, has the disadvantage that other foci may exist, not be discovered, and later take on a rapid development calling for another operation. This is especially true when many tumors are found, for it is held that multiple fibroids mean many foci. The argument that during the child-bearing age myomectomy should be the operation of choice, and after the menopause hysterectomy, has some force. We must consider, too, that it is still a disputed question whether the disease is purely local, whether it is confined to the uterus, or whether it is general, extending to the adnexa, and this general condition prove to be a source of as much trouble as the uterine fibroid, demanding a second operation and complete eradication of the pelvic organs. It is contraindicated whenever there is inflammatory disease within the pelvis. As near as I can ascertain, the mortality in myomectomy is fully equal to hysterectomy, even with the best known operators. There is danger, too, of post-operative hemorrhage. As I am writing this paper one of my patients is lying in St. Joseph's Hospital, very much reduced from hemorrhage occurring one day after a single myomectomy. The tumor was about the size of a small orange. It was embedded in the muscle tissue to the endometrium, and the other half was strictly subserous. It shelled out easily, but I had considerable trouble to control the bleeding, although only one artery spurted. When I had finished I considered that I had done a complete job. One day later she began to bleed from the uterus, and on the second day lost fully three ounces of blood in two hours. She bled also into the abdominal cavity to such an extent that I was obliged to do saline transfusion and use other means to overcome the shock. Forty-eight hours after this her temperature went up to 102.5°, and is ranging around 100° now, ten days after the operation. All these things taken together seem to render it highly essential that the surgeon should use great care in the selection of his cases for myomectomy, see to it that in closing the cavity the hemorrhage is absolutely controlled, and that the suture and ligature material is aseptic beyond question.

Having decided to enucleate the growth, shall we proceed through

the vagina or open the abdomen? In case the tumor is small I favor the method of turning the uterus into the anterior or posterior vagina and then proceed to shell out the growth or growths. This can be accomplished about as easily as through an abdominal incision. It is possible, too, to examine the tubes and ovaries at this time. It, too, has the usual advantages of vaginal work—less shock, rapid convalescence, no visible scar, no bandaging or wearing of abdominal supporters, no danger of hernia. When the growth is too large to be brought into proper and clear view per vaginam I favor opening the abdomen. In this way we can ascertain the exact condition of the uterus and whether it is involved to such an extent that myomectomy is impracticable, whether too many nodes exist, and whether to abandon the intention to enucleate and proceed to hysterectomy.

Another thought is worthy of consideration: Shall we shorten the round ligaments or suspend the uterus at this time? It is claimed—and I think experience will convince one of the truth of the claim—that a fibroid uterus is nearly always retrodisplaced, and it is held that this arises from a proliferation of the muscularis of the capillaries, and that retrodeviation of the uterus, by reason of the abnormal circulation in and about the organ, is a predisposing cause. In view of this I believe that shortening the round ligaments when operating through the vagina, or ventrofixation after opening the abdomen, will re-establish a proper circulation and remove this etiologic factor.

HYSTERECTOMY. When the tumor involves a great deal of uterine tissue, so much that a proper closing of the tumor cavity is not possible, when the organ is studded with little tumors or nodes, when coexisting pelvic disease is present, when the growth is degenerating, when there are adhesions, when the tubes and ovaries are involved to such an extent that they must be sacrificed, when the disease is no longer local, when the change of life has occurred—then in hysterectomy lies the woman's only hope of relief. Admitting that the organ must go, we are again confronted with the problem whether to do a vaginal, abdominal, or combined operation. If the cervix is normal and healthy I favor the abdominal route and supravaginal amputation of the uterus. I favor this not only for the usual reasons given—that it preserves the vaginal vault, if properly suspended prevents prolapse; that

the danger of infection is less than when the vagina is open—but for the additional reason that it maintains the sexual magnetism which belongs to this part of the organ. If the cervix is lacerated or diseased, then the entire organ must be extirpated. The reason for this is obvious: a diseased cervix is always a source of annoyance, leucorrhea, etc., and is a standing invitation for carcinoma to engraft itself. The operation may be done by the abdominal route or through the vagina. If the tumor is small, not larger than a uterus at the fourth month of gestation, with few or no adhesions, vaginal hysterectomy is easy. If larger than this and adhesions exist the abdominal operation is easier. It is a matter of little importance whose method of operating is followed. An understanding of all methods is almost indispensable. Whether we follow that of Perry, Jacobs, Martin of Berlin, Bardenheuer, Kelly, Senn, Baldwin, Baer, Le Bec, Richelot, Ségond, Doyen, Pryor, or Allen is a matter of little importance so far as this paper is concerned. Perhaps those of Pryor, Doyen, and Allen represent the best and easiest ways of supravaginal amputation, panhysterectomy, and the combined operation. In a sense, every case has peculiarities of its own, and certain modifications are almost necessary to every method. In this connection the question of the conservation of the ovary seems apropos. I favor the leaving of normal ovaries; or if only one is healthy, leave it; or if only part of an ovary can be saved I do that. When the ovary is studded with little pea-like cysts, these can be opened by ignipuncture or in any other way, and, if otherwise sound, leave it.

Personally, I am convinced that it modifies many of the nervous symptoms which often violently intervene when the adnexa are completely removed. I admit that if left they soon begin to atrophy or degenerate. Still, the sudden onset of the symptoms accompanying complete removal is mitigated. I have in mind a case operated on a year ago, in which one ovary was left, and up to this day she has not had a hot flash, a chill, a sweat, or any of the unpleasant features of the change of life. She consulted me in June last, and I found the ovary tender and somewhat enlarged, probably degenerating. Otherwise she was in perfect health. I have had no experience with leaving ovaries after the menopause. There are advocates of this. True, the ovary continues to ovulate for some time after the change of life.

PALLIATIVE MEASURES. *Curetage.* I look upon curetage as merely a temporary relief. When the patient is very much reduced by reason of continuous hemorrhage, a thorough cureting will arrest the loss of blood and enable the patient to gain strength and vitality, and so become properly prepared physically to undergo a radical cure. The work must be thoroughly done in order to be of any lasting benefit. It is advisable after curetage to apply Churchill's tincture of iodine. This is often followed by relief for weeks and months. It is not only applicable in patients such as I have mentioned (those reduced by hemorrhage), but for such cases as by reason of other existing disease—kidney, liver, heart, lung, etc.—are unable to submit to curative measures, and to those nearing the change of life and who are anxious to rely upon the menopause.

Electricity. Electricity is not used as much as formerly in the treatment of fibroids. It nevertheless has its place, and is powerful for good, as it certainly often symptomatically cures and reduces the size of the growth, even if it does not entirely disappear. In simple, small interstitial tumors accompanied by pain and hemorrhage it often mitigates and controls the pain, lessens or stops the loss of blood, and reduces the size of the tumor. The fibrocystic tumors, or those of a gelatinous character, are never benefited by electricity. It is the hard fibroids—the myofibromata—which are susceptible to its action. It should be remembered that it is contraindicated in pyosalpinx, and, where there are adhesions to the growth, that it may be a cause of peritonitis and even death. The treatment of fibroids by the method of Apostoli is tedious and painful, and, with me, it is impossible to induce patients to continue it when I am unable to promise results.

Salpingo-oöphorectomy. The removal of the adnexa as a cure for uterine fibroids is practically obsolete. I am, however, almost certain I have seem complete disappearance of the tumor after salpingo-oöphorectomy. In nearly all these cases, however, it has little effect. Gangrene has followed it, and all the unpleasant symptoms of the menopause are violently thrust upon the patient. These considerations, together with the fact that myomectomy and hysterectomy can be just as easily and safely done, have put this procedure into disuse.

Ligation of the Uterine Arteries. Good temporary results can be

expected from ligation of the uterine arteries, but it has never been my fortune to cure a case by this method. Improvement, however, does take place and hemorrhages cease for a time. It nevertheless does not take long for collateral circulation to be established. In patients much reduced by loss of blood, and who, owing to their condition, are not willing to chance a radical operation, curetage combined with ligation of the uterine arteries will act as an important prelude to future curative intervention.

Organopathy. With the use of extracts—thyroid and mammary—I have had little experience. Such as I have had has been negative, and reported results do not increase my faith in this direction.

Medical and Natural Cures. Medicines administered internally and hypodermatically may perhaps control to a degree the hemorrhage, but no medicine has been put to a test which has had any influence on the tumor itself. Natural cures have taken place after the menopause, and if the patient is nearing this period we should not deny her the right to await this unless the progress of the disease is rapid and the danger immediate.

My conclusions, therefore, from personal observation, are that myomectomy is the operation of choice:

1. When the tumor is pedunculated.

2. When it is single, whether subserous, interstitial, or submucous, and can be enucleated without loss of uterine tissue, and the tumor cavity can be closed and covered with peritoneum.

3. When the desire for an heir outweighs all other considerations.

That hysterectomy is indicated:

1. When the tumor involves so much of the uterus that a cavity too large to be properly closed and covered with peritoneum would follow its removal.

2. When several tumors exist, especially little nodules.

3. When the adnexa are diseased to such an extent that they must be sacrificed.

4. When the disease ceases to be local.

5. When hemorrhage, pressure, or great pain is a persistent symptom.

6. Whenever malignancy is suspected or the tumor is of rapid growth.

7. After the change of life.

That palliative treatment is indicated:

1. When the patient is very much reduced from loss of blood, as a prelude to radical cure.

2. When the existence of chronic nephritis, diabetes, tuberculosis, or other constitutional disease forbids radical cure.

3. When the patient is past forty years of age, the tumor small, the main annoyance hemorrhage, and she is desirous of awaiting the effect of the menopause.

Bibliography.

Allen, D. P. Hysterectomy for Removal of Large Uterine Myomata by the Combined Vaginal and Abdominal Method.

Baker, W. H. Myomectomy for Fibroids.

Polk, W. M. Surgical Treatment of Fibroids.

Goffe, J. Riddle. Myomectomy per Vaginam.

Boldt, H. J. Myofibroma Uteri.

Taylor, Hugh M. The Angiotribe in Abdominal Surgery.

Sherwood-Dunn, B. Total Hysterectomy.

Carstens, J. H. Technique of Abdominal Hysterectomy.

Ingraham. Facts in Regard to Uterine Fibroids.

Vander Veer, A. Treatment of Uterine Fibroids by the General Practitioner.

Noble, C. P. The History of the Earlier Operations for Fibroid Tumors.

Moseley, W. E. The Use of Thyroid Extract for the Treatment of Fibroid Tumors.

Shober, J. B. The Use of Mammary Gland in the Treatment of Fibroid of the Uterus.

Penrose. Text-book of Diseases of Women.

Kelly. Operative Gynecology.

Stinson, J. Coplin. Abdominal Hysterosalpingo-oöphorectomy by a New Method for Multiple Fibroids of the Uterus.

Shoemaker, G. E. Vaginal Hysterectomy for Small Bleeding Uterine Fibromata.

Kelly, H. A. The Evolution of my Technique in the Treatment of Fibroid Uterine Tumors.

Davenport, F. H. Intra-abdominal Amputation of the Uterus.

Smith, A. L. Some Observations of Pryor's Method of Removing the Fibroid Uterus.

Clarke, A. P. Degenerative Changes that Occur in Fibromyomatous Growths.

Chase, W. B. Remarks on the Rational Treatment of Uterine Fibroids.

Donald, A. Intraperitoneal Hysterectomy and Total Hysterectomy by the Combined Method for Fibroid Tumors of the Uterus.

White, Herbert. Electricity in the Treatment of Uterine Neoplasms.

Le Bec. Total Hysterectomy for Big Fibroids.

Massey, G. B. The Ultimate Results in 86 Cases of Fibromata of the Uterus treated by the Apostoli Method.

Goelet, A. H. The Surgical Treatment of Fibroid Tumors of the Uterus.

Polk, W. N. Thyroid Extract in Fibroid Tumors.

Quillian. Suprapubic Operation for Fibroids.

Smith, A. L. Rapid Decrease in the Size of a Fibroid Tumor of the Uterus following its Treatment by Electricity.

Gilliam, D. Tod. The Uterine Fibroid.

Baldy, J. M. The Surgical Treatment of Fibromyoma.

DISCUSSION.

Dr. A. Vander Veer, of Albany, New York.—Mr. President: The paper to which we have just listened is an admirable one, in that the author has brought the subject up to date. I was impressed with his earnestness in dealing with myomectomy, which is an operation that has very circumscribed limits. He touched on it with safety and conservatism. I recall two cases in which I have done myomectomy during pregnancy, the patients having gone on to full term and were delivered. In these cases I operated through the abdomen, although I have operated through the vagina in several instances. One child is still living, while the other lived for a few months and died of some acute trouble. It is one of the admirable operations to do in certain cases.

Dr. Fish has presented the treatment of fibroid tumors of the uterus in a conservative manner. He has handled the subject with a judicial and conservative spirit. I heartily indorse the paper, and, did time permit, I would like to discuss it more fully.

Dr. Joseph Price, of Philadelphia.—I sometimes say to patients that I would rather have an illegitimate child than a fibroid tumor of the uterus, and in that way avoid a hysterectomy. I have throughout my surgical life done myomectomies from above and below during gestation, suspecting at the time of the removal of the fibroid that others existed. I have presented the fact to both the woman and her husband that it is well for her to continue to bear children; that if she conceives at intervals of fourteen or sixteen months in all probability she will escape the growth of fibroids and an operation. I remember very well delivering a couple of women, and while delivering the placenta by the expression method I found a little fibroid, as large as a walnut, somewhere about the uterine wall. I have insisted upon lactation both in public and in private practice, counselling these women to have regular conceptions and gestations, telling them I might otherwise find in the body of their uteri small fibroids, at the same time informing their husbands, fearing some abominable methods of avoiding conception might be practised, that it would be safe for their wives to bear children.

Some years ago a gentleman lost his wife from a hysterectomy. He married again. His second wife conceived, and he came to me during the fourth or fifth month saying that she was suffering from symptoms of abortion. The wife came to me, and after examining her I recognized a pelvic tumor. He married his second wife after thirty.

Late marriages are unfortunate in many respects, in that they give us the Cesarean sections and the Porros in educational centers in that great domestic element after the age of thirty. Take the class of women down East, and they are engaged to more Gettysburg colonels, captains, and lieutenants than we had in both armies. All of these women carry fibroid tumors. They have come to me with fibroids in which forceps delivery would be difficult and the tumors absolutely irreducible. In such cases I had incised the vaginal vault, tore it with my two fingers, applied the traction forceps, and delivered a fibroid the size of a large goose-egg. I have applied the forceps to a small, short knife-blade pedicle, placed sufficient gauze, removed the forceps, and the patient went to term. It is a mistake to counsel against child-bearing in the early development of small fibroids.

I value the paper because it is thoroughly surgical. It is conservative, and places the subject before us in a better and clearer light than it has heretofore been presented.

DR. FISH (closing the discussion).—In the presence of a small fibroid pregnancy may go on without interruption. Pregnancy, as suggested by Dr. Price, as a cure for fibroids acts very much like shortening of the round ligaments; it straightens out the kink in the uterus and overcomes the abnormal condition of the circulation due to retroflexion of the uterus. Myomectomy is admissible sometimes during gestation.

With reference to ligation of the uterine arteries, I call to mind one case in which complete necrosis of the cervix occurred within a week. I then did an abdominal hysterectomy, amputated the uterus high, and removed the rest of the organs through the vagina.

ACUTE SENILE ENDOMETRITIS.

By L. H. DUNNING, M.D.,
INDIANAPOLIS.

Since the preparation of the paper read by me at the meeting of the American Medical Association at Atlantic City, several other cases of acute senile endometritis have come under my observation and treatment. These cases possessed, in the main, features characterizing the two cases reported in the paper, and confirm my belief that acute senile endometritis is a lesion distinctly inflammatory in character, dependent upon infection, and differing essentially in its course from acute endometritis before the menopause only in consequence of the difference, anatomically and physiologically, of the organ the seat of the lesion.

In the elucidation of the subject an elaborate comparison of these differences is not necessary, as they are familiar to all of you. Briefly, some of the differences influencing the course of the acute inflammation in the functionating and non-functionating uterus may be stated as follows:

In the functionating organ the vascular supply is exceedingly abundant, tissue changes and the reparative processes active; indeed, it must be evident to one who looks into this subject carefully that the healthy uterus during the menstrual epoch undergoes quite as great changes and has as great powers of resistance as any organ of the human body. Quite different is the post-climacteric uterus. It is in a quiescent state. The circulation is markedly diminished, atrophy of its tissues has taken place, its power of resistance is slight, and its ability to repair damages greatly lessened. In it, as in all tissues of old age, degenerative changes are prone to occur.

The functionating uterus is subject to periods of physiologic activity and rest—a condition conducing to the maintenance of a high state of health and to the exercise of great powers of resistance and repair. The senile uterus is in a state of physiologic rest—a condition favorable to a longer period of existence provided no

untoward circumstances arise, such as trauma or infection, to lead to active degeneration. The powers of resistance and repair are so feeble that the infliction of any severe injury is prone to prove destructive.

In the functionating organ an acute inflammatory process is very active; the battle rages, and the powers of nature are often sufficient to restore the organ to health. In the senile organ it is languid; the battle is less furious, but more prolonged and more destructive.

PATHOLOGY. In the commencement the inflammation may be limited to the cervix, but, as a rule, speedily involves the whole mucosa. The vaginal portion is usually involved, the surface about the os being covered by a purplish-hued area, dotted here and there by minute depressed ulcers, or there may be isolated patches which are sensitive to the touch and bleed easily. The external os is patulous. In one recent case there were hanging from the os two small mucous polypi. The cervical canal, which is short, may be patulous or contracted; usually, I believe, it is patulous. In no case I have seen has there been any difficulty in passing the uterine sound into the uterine cavity, and yet there has been in all cases a retention of fluid within the uterine cavity. This is usually sanguino-purulent and of very offensive odor. I was at a loss for some time to account for the retention of the fluid when the sound passed so easily, especially in those cases in which the uterus was in normal position, but finally found what seems to me to be an adequate explanation of the fact. In all instances of retention the fluid was thick and mucilaginous, and in some instances contained small clots. This retards the flow, and, indeed, sometimes partially seals up the opening, exactly as we sometimes find the incision or opening of a partially filled pus cavity agglutinated, though the incision or opening be large enough to easily admit the passage of a finger.

Again, the drainage of the normal uterine cavity is effected not by gravity alone, but by gravity aided by movements of the cilia and rhythmic uterine contractions. In the senile uterus the cilia have disappeared, as have also the rhythmic contractions.

The size of the uterus varies according to the amount of distention of its cavity and the extent of the infiltration. In all instances I have seen it has been larger than the normal post-climacteric

uterus. In one instance the cavity measured two and three-fourths inches. The increased size is not due to a thickening of the walls alone, but also to a dilatation. The uterus may be in normal position, but is quite frequently retroverted.

A combined examination, always difficult after the menopause, is often unsatisfactory in acute senile endometritis, on account of the inelastic and sensitive condition of the vagina. It should, however, be effected, under anesthesia if necessary, for the reason that diseased appendages are not infrequently present, and when present, influence the course of the disease and line of treatment.

In both of the instances in which I did hysterectomy for this lesion, there was disease of one appendage and in one slight pelvic peritonitis. In all cases the writer has seen there has been present a moderate degree of senile vaginitis.

Regarding the morbid histology encountered in cases of acute senile endometritis, I cannot do better than to quote the summary of my elaborate pathologic report contained in the former paper. It is as follows:

"The characteristic pathologic features of the inflammation are: (*a*) A thickened endometrium, the free surface of which is devoid of its epithelial layer. (*b*) Increased vascularity, with peculiar arrangement of small bloodvessels. (*c*) Small round-celled infiltration. (*d*) Diminished glandular elements. While a few glands are distinctly to be seen in many of them, the epithelium is desquamating and the lumen filled with granular débris. They may be said to be functionless glands. (*e*) Degeneration of the coats of the arteries of the muscular layer of the organ. In one specimen the degenerative process is distinctly hyaline. (*f*) In not one section examined from various parts of the organ could there be seen any excess of connective tissue."

In addition to this summary, it ought to be said that the inflammation has a tendency to spread beyond the limits of the endometrium and into the Fallopian tubes. Evidences of this are found in the round-celled infiltration of the muscular layer and in the degeneration of the walls of the bloodvessels in the same structures; also in our ability under microscopic examination to trace the inflammation from the tissues lining the uterine cavity into the Fallopian tube and outward along the mucous membrane of that organ, as far, in one case, as three-fourths of an inch beyond

the uterine cornu. This I deem of importance, as showing the tendency of the inflammation to spread to the uterine appendages and the pelvic peritoneum, resulting, in some instances, in pus accumulations within the tubes and ovaries or leading to pelvic adhesions.

If our observations and conclusions in this respect be true we have here an explanation of the etiology of many of the cases of pelvic abscess[1] in old women, the causes of which we have heretofore thought to be inexplicable.

Dr. R. H. Ritter, who made the microscopic examination in the cases reported in the paper already referred to, called my especial attention to the distribution of the small bloodvessels in the endometrium. In his report he said: "The minute bloodvessels with which the endometrium is abundantly supplied often run to the surface and seem to end at the surface. I believe the hemorrhage which had evidently taken place from the mucosa was due to the erosion of the minute bloodvessels which I have described and whose blind ends may be seen at the surface. It has been a direct hemorrhage rather than a diapedesis."

CAUSATION. Unquestionably many cases of endometritis after the menopause have their origin in an inflammation of the endometrium antedating the climacteric. The process has been a continuous one, extending over a period of years, and during the progress subject to varying degrees of intensity, chronic for the main part, yet showing periods of acuteness, trauma, local irritation, or renewed infection acting as exciting causes.

Unquestionably, too, there are cases of endometritis that appear in women for the first time many years after the menopause. I have seen two such. The sources of trauma and infection are numerous and identical with those operative in the younger patient, omitting those, of course, of puerperium and menstruation.

For obvious reasons gonorrheal infection is not so liable to occur in the aged. We can readily see how the elimination of these active causes of inflammation are favorable to the infrequent occurrence of endometritis in the aged. Displacements of the uterus may act as a cause of the lesion. Retroversion has long

[1] One instance of this kind was recently seen by me in a woman eight years beyond the menopause. The pelvic abscess appeared some six weeks after the beginning of the muco-purulent discharge from the uterus.

been recognized as a cause of endometritis. It is a more active cause after than before the menopause, and this is because of the very imperfect drainage of the uterus. The retained secretions become purulent and fetid, and tend to make the inflammation more active and persistent.

Skene[1] emphasizes the influence of fibroid tumors of the uterus as causing senile endometritis. I recently saw a case in which the inflammation was very acute, accompanied by quite a profuse, bloody, fetid discharge in which two mucous polypi were attached to the anterior lip of the cervix. The case had very much of the appearance of one of cancer of the uterus. Unquestionably, in some instances, the inflammation of the endometrium may be an extension of the inflammation in senile vaginitis, and it is oftentimes difficult to determine which lesion first existed.

Further observation and study is requisite to determine the influence of gonorrheal infection upon the lesion in question.

Symptoms and Course. This form of inflammation appears abruptly. The most pronounced symptom is a fetid discharge from the uterus. It is usually at the onset a thin, purulent discharge, but, as a rule, very soon becomes sanguinopurulent. If the discharge be bloody it is usually thick and has a most horrible odor, and may be intermittent. It is not usually abundant, but not infrequently is very dark, almost tarry, in appearance. In all cases it is more or less irritating to the vagina and labia. Pain and soreness through the pelvis is uniformly present. The pain is not intense. It has been described to me by patients as being a sore pain, with the appearance of an occasional sharp pain. The back aches and is lame; usually there is vesical tenderness and more or less pain upon defecation. In cases in which the uterus becomes distended, after a time there is a feeling of fulness in the hypogastric region, expulsive pains come on, a free discharge occurs, and there follows a period of relief. It is probable, indeed I think certain, that in a considerable percentage of these cases, if left to themselves—*i. e.*, treated only by douches—after a time the acute stage will pass, to be succeeded by a chronic process lasting indefinitely, or the course of the disease may be marked by the occurrence of acute exacerbation. Unquestionably, in the more acute cases, the general health is markedly impaired. In one of my

[1] New York Gynecological and Obstetrical Journal, June, 1894, p. 644.

patients there was a considerable loss of flesh and a pronounced sallow complexion, so that the general appearance of the patient strongly suggested a malignant disease.

In what has been said regarding the process of the disease we would expect that in a certain percentage of cases pelvic inflammation would develop, together with disease of the uterine appendages.

The only disease for which acute senile endometritis is likely to be mistaken is cancer of the uterus. The history, the general course of the disease at the onset, and the appearance of the patients are very similar; but if it be remembered that in carcinoma there is neoplasm, while in senile endometritis there is none, except when due to a sloughing fibroid, a mistake is not likely to be made.

If there still be doubt a microscopic examination of the uterine scrapings would render clear the diagnosis. If left to itself the disease may prove fatal in consequence of the development of suppuration within the appendages and pelvic tissues, finally resulting in a pelvic abscess or true septicemia, or the acute process may gradually merge into a chronic one, dragging on a weary course extending over many years.

TREATMENT. The treatment of acute senile endometritis must, to some extent, depend upon the intensity of the inflammation and the extent of the secondary lesions.

Where the appendages have not become involved a thorough dilatation of the cervical canal, douching the uterine cavity with an antiseptic solution, a careful yet thorough curetment with the sharp curet, the application of a caustic such as acetic acid or pure carbolic acid followed by alcohol, and finally establishing and maintaining good drainage, will result in a cure in most instances. In my case of large pelvic abscess complicating the disease a cure was effected by cureting the uterus and draining the abscess through a vaginal incision.

If there be retroversion this displacement must be corrected by appropriate means, and if the remnants of a sloughing fibroid be found they must be removed. This can usually be accomplished by a sharp curet. If it cannot so be removed a vaginal hysterectomy may be resorted to.

Should the uterine appendages be found markedly diseased they should be extirpated, as well as the uterus, by the vaginal route.

DISCUSSION.

DR. A. VANDER VEER, of Albany, New York.—Mr. President: This paper has interested me from the fact that I have watched these cases of senile endometritis for many years, but only recently has the pathology of the disease been made clear to me. I was interested in reading the argument of Sir James Y. Simpson, thirty years ago, on the subject of senile atrophy of the uterus. It showed that he was approaching these cases in the proper light.

I have been impressed with the point that Dr. Dunning brings out as to the diagnosis between these cases and that of beginning cancer. I believe we gain a great deal by examining the material which we remove with the curet, in that it aids us in making a distinction between the two. Certainly, in cases of senile endometritis we would not do as radical an operation as we would in a case of cancer. We would treat it short of that. I have been surprised to notice the condition he refers to—the amount of fluid that will be found in the uterus at the age of fifty-five or sixty when we meet these cases in which there is a fair opening—and yet when we dilate the uterus we see as much as an ounce of fluid escape, and in some cases a decided amount of pus, from the cervical canal preparatory to careful cureting. In our treatment we must be sure that the appendages are not implicated, but are free from evidences of pelvic inflammation. I have succeeded in these cases very well by careful dilatation and cureting with a not too dull instrument, but one sufficiently sharp that it will clean off the surface pretty well. We should be careful not to do too much, but simply a careful and thorough cureting, then wash out the cavity thoroughly with boric-acid solution. I believe we get some good from the application of persulphate of iron applied to the uterus carefully.

In addition to what Dr. Dunning has suggested, tincture of iodine is the proper treatment. However, I rarely use either of them. After carefully washing out with boric-acid solution I pack with iodoform gauze, so that every portion of the uterus is seized with a due amount of pressure, which is given to the surface of the cavity of the uterus. This packing is left in for two, three, or four days, as the case may be. I do not do much aside from that one thorough treatment under an anesthetic, but here is one of the exceptions I make: I have the patient wear an intrauterine silver pessary, keep the cervical canal well open, and I have fairly good success in the treatment of this class of cases. In some cases I have had to do a second cureting and repeat

the packing, but they have usually yielded to that treatment. In some instances I have had to make an application of the persulphate of iron a second time. It is very trying when a patient's daughter comes to you and says, "My mother is fifty-five years of age, and I am much alarmed about the discharge which she has." She complains of vaginitis. It is hard sometimes to tell the cause of this discharge, but I find in most cases it is the result of endometritis. It is a great comfort to the daughter and to the mother when, after a careful examination, you can say that this is not a malignant disease, and that you can do something more than use simple injections for them. I have found it necessary to give these patients an anesthetic and clean out the cavity in the manner I have just referred to.

Dr. Edward J. Ill, of Newark, N. J.—I am glad Dr. Dunning has discussed senile endometritis. The point that has interested me most is the causation. I look upon cases of endometritis in old women, or those who have passed the climacteric, as being produced in the following way: if we will obtain the history of these patients, and particularly the history of the climacteric, we will find that they have had at some time discharges; they have likely had a chronic endocervicitis, and from atrophic changes the cervix becomes contracted, and we then have a simple retention cyst. When the uterus gets thoroughly full there is a little reopening of the old cervical canal, infection takes place from the vagina, and we then get the pathologic condition referred to by the essayist. I have studied this matter so much that I feel that this is the cause of the senile endometritis. I have never yet seen a case of acute gonorrheal endometritis in a woman beyond the climacteric, and until within a few months I never saw it in a child. Within that time I have seen it in a little girl of six who had a genuine endometritis of gonorrheal origin. These cases must be extremely rare.

Dr. D. Tod Gilliam, of Columbus, Ohio.—I wish I could discuss this subject in a scientific manner, because I am probably one of the most anxious men in the world regarding this disease. I have a case of it in my own home, consequently I am very much interested in anything that is said on the subject.

With reference to Dr. Ill's remarks, that these women always suffer more or less from the retention of secretions and cervical stenosis, this does not apply to my relative's case. She was exceptionally free from all uterine and pelvic trouble. She had never had any inconvenience during menstruation; she had never had any inflammatory trouble or pelvic pain until endometritis came on, and it has proved so intractable to treatment that sometimes she feels like having the uterus

removed. I would like to ask if anybody knows whether these patients ever get well if not treated radically?

Dr. James T. Jelks, of Hot Springs, Ark.—I do not think I can add anything of interest to what has already been said, but I would like to impress upon the Fellows of the Association that there is no inflammation of the uterus or of any other organ of the body, in a pathologic sense, without infection. A woman receives an injury, a traumatism, or burn, etc., and as a result there will be inflammation of the particular organ injured. Applying our remarks to the uterus, What takes place here? Dr. Ill tells us that most of these women with senile endometritis have had previously some inflammation of the cervical canal; that they have passed the menopause. The tissues after the menopause, particularly if the patient receives a blow, are less resistant. The endometrium of the aged woman is a point of least resistance, and we get infection probably from organisms in the cervix or from organisms that are constantly present in the vagina of the woman. Possibly the bacillus of Dœderlein has failed to protect her. The cervix may be converted into a retention cyst or we have a moderate quantity of mucus in the uterus which the organ fails to get rid of properly, and it serves as a culture medium for the development and growth of micro-organisms. We have infection and inflammation because that is the point of least resistance. These cases of senile endometritis should be treated by thorough dilatation and curetage, painting the parts with iodine or carbolic acid, and packing with iodoform gauze.

Dr. A. Goldspohn, of Chicago.—I have seen four pronounced cases of senile endometritis and treated them. In nearly every one there was quite a storm of reflex symptoms, and intense backache was a pronounced feature. They had been prescribed for by very good internal medicine men repeatedly, without even temporary benefit, and against their will they finally submitted to an examination, and it was found that they suffered from stenosis of the cervical canal. The general practitioner should be informed as to these cases, and they are the result, in some instances, of the pernicious, intrauterine, old-fashioned cauterizing. The man who attacks the uterus for everything and anything whenever a pelvic lesion is recognized, is the one who is not able to make a diagnosis between disease of the uterus and disease of its adnexa, and he frequently abuses the former for disorders of the latter. The caustic liquid applied by the orthodox "applicator" wound with cotton does not reach the endometrium proper, but is squeezed out in the cervical canal and does permanent damage, thereby inviting stenosis and retention. Furthermore, the

treatment of endometritis by means of the positive galvanic pole has been pernicious, especially when the electrode is allowed to be uncovered or active where it comes in contact with the internal os. The internal os contracts more upon an instrument than any other portion of it. There the current is then given off mostly because of the closer and more continuous contact, and excessive cauterization and stenosis result.

The treatment of endometritis by electricity is a mistake. The positive pole is on exactly the same plane, as far as its usefulness and harmfulness are concerned, as would be a wire heated in any fire and then run into the uterus. The most potent galvanic current is a germicide only in so far as it destroys tissue. You can pass a strong current through a lot of microbes and they will not be killed.

DR. DUNNING (closing the discussion).—I have very little to say. I feel grateful to the Fellows who have discussed my paper. I wish to call attention to the fact that I was treating the acute form of the disease and not the chronic. We have a great many cases of the chronic form of the disease. They are distinctly different from the acute cases. The acute cases are attended by acute symptoms, such as rise of temperature; they suffer much pain and have a great deal of soreness in the back. They have a profuse, irritating discharge. In my paper I endeavored to show that we should pursue a different course in treating the acute cases. My experience teaches me that they are more amenable to treatment than are the chronic cases. That point will apply to the question as to whether it is necessary to continue treatment for a great length of time. It is necessary to do this in the chronic cases. I have patients under my observation who have been coming to my clinic in the free dispensary off and on for two or three years for the cure of chronic endometritis; yet I have seen a cure of three acute cases with cureting and thorough applications to the interior of the uterus, have sent them out in ten days, and have given them no treatment afterward except directing cleanliness and the use of an antiseptic wash and tonics, and sending them out into the open air. So far as I could determine, every evidence of the disease has disappeared. We could not accomplish this in the chronic cases. It is aside from my purpose to discuss the treatment of the chronic cases.

One of the principal reasons in making a distinction between the two classes of cases and to draw the line closer, was to show the danger in the acute cases of involvement of the tubes and ovaries. Out of five cases I have had, in three one ovary was involved; in one there was an abscess; in one there was implication of the tubes, the inflam-

mation of the tube extending from the horn of the uterus, as demonstrated by microscopic examination. This is important. We ought to look for disease of the appendages in every case of acute senile endometritis. The chronic cases may run along for years without involvement of the appendages unless they have an acute exacerbation.

TUBO-OVARIAN ABSCESS AND HOW BEST TO DEAL WITH IT.

By EDWIN RICKETTS, M.D.,
CINCINNATI.

GONORRHEA in the female oftentimes causes a pyosalpinx, and on account of the close proximity of the ovary to the wall and fimbriated extremity of the Fallopian tube the same is frequently infected, bringing about tubo-ovarian abscess. During the last decade and a half this has been proved by rich clinical observations, and demonstrated by special efforts on special lines in our surgical art. The ovarian infection resulting in an abscess is secondary to that of the tubal, and there is a communicating pus channel. The tubal part of the abscess may be large, while the ovarian may be small, and *vice versa*. The ovarian part may be high up, while the tubal may rest well on to the pelvic floor, and then both may come in contact with the pelvic floor. It has been mistaken for other diseased conditions that may be within the pelvis, and frequently has not been differentiated until after the abdomen has been opened. Enucleation without injury is not an easy procedure, even after the abdomen has been opened. Its contents are generally most virulent, and should the field of operation be flooded with them great risk is added to the operation. Microscopic investigation during the operation, to settle the question of the virulence of the contents, has not been of any reliable assistance, and takes up valuable time.

The disease is unilateral more often than bilateral. It may be complicated by normal or ectopic pregnancy, intestinal, vaginal, or vesical fistulæ. When on the right side appendicitis may prove to be a serious complication. Vaginal incision is not followed by that degree of shock which follows an abdominal section. This is especially true after abortion or in those cases of tubo-ovarian abscess following delivery at full term. It is true that vaginal

drainage under anesthesia has an advantage over abdominal section, putting the patient in better shape for a final effort by the abdominal route one month or twelve months later. In other words, we must take two bites at this pelvic cherry if we are to act for the best interest of our patient. In those cases which are not complicated and in which a large abscess with a thin wall is recognized after the abdomen has been opened, in poor subjects for operation it is best to consider the advisability of draining per vaginal section without an attempt at enucleation. In those cases in which there is a fistula, large or small, communicating with the intestine, vagina, or urinary bladder it is always best to drain before attacking the same by the abdominal route. To correctly diagnose, the abdominal route offers most; but to adhere strictly to this route under all circumstances is more expensive than to drain primarily by vaginal incision, letting the abdominal route come in as a secondary procedure, if deemed advisable. With an ectopic pregnancy as a complication, the same had better be removed and the tubo-ovarian abscess simply drained per vaginam, unless the walls are thick and you are positive that it can be enucleated and removed without rupture.

DISCUSSION.

Dr. James T. Jelks, of Hot Springs, Ark.—Mr. President: Dr. Price and Dr. Deaver are authorities on how to proceed to deal with cases of tubo-ovarian abscess, but I want to say that the majority of cases of pelvic abscess are not to be found in Philadelphia. They are scattered all over the United States, and these patients do not all fall into the hands of Philadelphia surgeons; they cannot get them.

When a woman presents herself with a pelvic abscess, with a temperature of 105°, we must do something for her. She may have travelled many miles. We must operate on such cases, otherwise they have no chance to get well. What are we going to do in these cases? Shall we attack the abscess by the abdominal route? No. We have learned by experience that these patients stand a better chance if we resort to vaginal section and drainage for the time being, and then, when the patient is in a good condition, two or three months later we can do an abdominal section. The point I desire to make is, that if we were all ideal surgeons, if we operated under ideal surroundings, and had

ideal patients and ideal hospitals in which to operate, we could do ideal surgical work all the time. But this is not a fact. The bulk of this class of work is done out of ideal hospitals, and so I favor vaginal section and drainage, as I said a while ago, because these patients cannot all go to Philadelphia for Dr. Price or Dr. Deaver to operate on them. The mortality of these gentlemen is almost *nil* by the abdominal route, while my mortality is 5 per cent. by the same route. We operate a few times where Price operates a hundred times. We in smaller cities are not situated under ideal surroundings, but we strive to do life-saving operations. We make a vaginal section first, and then, later on, when the condition of the patient permits, we do an abdominal section.

A word or two more in relation to the character of the cases. We have three infectious agents to deal with. We have the gonococcus which recent authorities have demonstrated to be a comparatively harmless organism in the abdomen. It is scarcely possible for the gonococcus to cause a general septic peritonitis, hence we see pus by the quart, so to speak, flowing over the brim of the pelvis when we take out a pus-tube, and no harm follows. We may pour gonorrheal pus into the abdomen, as I have frequently seen it in abdominal section for pus-tubes, and it will not hurt the patients; they get well. We have two other agents; the staphylococcus aureus (and albus) is one of the infecting agents. It is a slow-growing coccus; it will produce peritonitis and death occasionally. Nature attempts to wall off the invasion of this coccus just as she attempts to wall off a gonorrheal infection. Because it is not very virulent and is of slow growth the *vis medicatrix naturæ*—the white blood-corpuscles—have a chance to come in and wall off the infection, and as a consequence we have a localized abscess, and the patients get well. We have another infective agent which, frequently after abortions or following the use of a dirty sound, is left in the uterus—the streptococcus—and which travels, as Williams has demonstrated, one-third of an inch an hour after the infection has taken place. We cannot do anything with it practically; hence a careful microscopic examination should be made in all these cases to determine the nature of the infecting agent. Infection by the streptococcus is a very different matter from that produced by either of the others. Nature has time to protect from them, but she gets no such time when dealing with the latter. For this class of cases I favor strychnin, whiskey, and antistreptococcic serum. When your diagnosis is made these streptococci have wandered far from the point of invasion, and curetage will not save them.

Dr. L. H. Dunning, of Indianapolis, Ind.—I do not feel quite

satisfied with the opportunity I had this morning of speaking my mind, but I shall refrain from making any attack upon Dr. Price in his absence. There is no more important subject before us at the present time than the one under discussion. I was much interested in the paper of Dr. Ricketts, and I believe in the main he has given us right views of the proper procedure in all particulars. I was very much pleased, also, with the remarks of Dr. Jelks in differentiating between the kinds of abscesses we have to treat. I find myself in the position I was this morning, in that I am compelled to differ to a slight extent from the views taken by the essayist, but not very much. I am going to speak from experience in this matter. It has been my privilege during the last ten years to be connected with a large dispensary and a great public hospital, where I have had opportunities to treat a goodly number of cases of tubal and a few tubo-ovarian abscesses, and gradually there has grown up a method of procedure which in the last two or three years I have followed invariably in these cases, and I see no reason for changing it. If we have a case of abortion come to the hospital, in which the woman is suffering a great amount of pain, having a high fever coming on within ten days or two weeks after abortion, with the development of an abscess, we know we have a streptococcus infection in almost all instances. We have an acutely ill woman, and it will not do in such a case to temporize. If, after she has been in the hospital with favorable surroundings, she gets worse, has more fever as the days go on, and signs of sepsis, we must resort to some active operative procedure to save life. If we open the abdomen we know that the mortality in the hands of every operator is great, notwithstanding the statements of some individuals. These cases have been classified, and it has been shown that in the hands of the most expert operators the mortality is very great; therefore, they should be attacked from below. I have seen these cases time and again, and I know exactly what I am talking about. In nearly every one of these cases the abscess can be reached from below. We can determine this readily by a hypodermatic syringe; we can relieve the acute symptoms and in most instances put the patients in a favorable condition for recovery without further operative procedures.

We have another class of cases that come to the hospital in which abortion has taken place. There has been a slight infection, which is followed by elevation of temperature, attended by some pain, but not as much as in the former cases. The fever is not so intense; the sickness is not so acute. These cases develop slowly and gradually. Perhaps the patient enters the hospital two or three months after abortion has taken place. In such a case we are satisfied we have to deal

with a tubal or tubo-ovarian abscess, slow in its growth and development, and the probabilities are that the infection is caused by the staphylococcus. We need to watch such a case very carefully and wait for the acute symptoms to pass away. We should keep the patient under close observation, at rest, keep the bowels regular, give her a good diet, and at the end of two or three weeks the acute symptoms may disappear, so that we feel justified in operating with very little danger indeed. My practice has been in such a case never to operate by the vagina, but as soon as the acute symptoms have passed away to attack the case from above, making a complete enucleation of the abscess cavity. Many of these cases will recover—the vast majority of them—yet in our public hospitals they yield a mortality of 3 to 8 per cent., even if we wait for the acute symptoms to disappear.

We have another class of cases that come to us with tubal or ovarian abscesses resulting from gonorrheal infection. We can usually separate them by careful study from those in which there is a history of recurrent attacks of diffuse pelvic inflammation without suppuration. The patients may have had two or three attacks and there has been no suppuration, but now there is suppuration. If the patient is not too acutely ill we can wait a reasonable length of time. We may not have to wait more than two or three weeks, and then we can operate by the abdomen. In all cases of chronic troubles I should favor attacking an abscess or a pus accumulation by the abdominal route, believing that this method will yield better results.

Last year, while on a visit to Paris, I spent some time in the clinic of Richelot, and saw him treat these cases to some extent. I had the opportunity to talk with him by means of an interpreter, and he assured me that in the acute cases they resort to both routes, but that when they were attacked by the vagina there was a lower rate of mortality and a more complete recovery of the patients. But the method which I have outlined is one which we have employed with satisfaction at the City Hospital in Indianapolis, and I see no reason to change it.

I take issue with Dr. Jelks in regard to the abdominal route being the route for the expert in all instances. The method I have been endeavoring to describe is for the expert as well as the non-expert. I object to the statement that only the two gentlemen who were mentioned by him attain the highest perfection in operative procedure.

Dr. Jelks.—I simply used the names of Dr. Price and Dr. Deaver as illustrations.

Dr. Dunning (resuming).—The method I have detailed, as I have previously said, is for the expert as well as for the non-expert. It is

the best method of all methods, in my judgment, and I should dislike very much to have it go out from this Association that there are only two or three expert operators in it who are able to deal with large abscesses from above, when there are really thirty or fifty capable of doing it.

Dr. J. Henry Carstens, of Detroit, Mich.—We virtually settled the question this morning in regard to operating by the abdomen and by the vagina, and it really gives me pleasure to be able to agree with my friend Ricketts in stating that the doctrine he has enunciated is the correct one. He is perfectly correct as regards the method of treating these cases of tubo-ovarian abscess.

I agree with Dr. Jelks in reference to the distinction between the micro-organisms that are at the bottom of the trouble. I believe that such men as Dr. Price, who do not place much confidence in micro-organisms or who only believe in gonococci, are entirely mistaken. We can have cases of gonorrheal infection; we can have the pus run over the intestines, and yet the patients will get well without the manifestation of any bad symptoms. We are sometimes astonished in examining the pus and making cultures from every one of these pus cases. In some instances the bacillus or coccus that is present is comparatively harmless. In other instances we may have staphylococcus or streptococcus infection; then the mortality is high, no matter by what route we attack the case. It is, therefore, necessary to make a clear distinction between the class of cases we have to deal with.

I desire to refer to another point which I do not believe, namely, that most of these cases are gonorrheal in origin. I think it has been clearly proven by the experience of a great many men that the gonococcus is not the cause of infection in all of these cases; it is only the cause of infection in about 25 per cent. of the cases. Other cases are caused by different kinds of germs, as the staphylococcus and streptococcus and various other kinds of bacilli and microbes. When we have half a dozen cases of gonorrheal origin to deal with, as a rule, they all get well; if we have other infections the cases are more difficult and we have more trouble. Therefore, I agree with Dr. Ricketts in saying that we should get rid of as much pus as we possibly can. I have been treating these cases very much after the manner that he has done. We make a mistake in teaching young men by being too dogmatic. Of course, in teaching medical students we must, to a certain extent, be dogmatic. We cannot tell them about exceptional cases, but simply of those cases which the average practitioner is likely to encounter. We must teach students the fundamental principles, and we cannot lay down strict rules and say to them that

they must always do this or that. We cannot instruct them to resort to the vaginal route in every case, nor to the abdominal. In one case it may be necessary, according to the indications in a particular case, to do a vaginal hysterectomy; in the other an abdominal hysterectomy. If we have a pus-tube in a young woman and wish to save an ovary or half of one, then the abdominal route is all right; but if we have a woman aged forty, forty-five, or fifty years with a pus-tube, with an old, lacerated cervix, a degenerated uterine mucous membrane, with possibly a retroversion of the uterus and adhesions, undoubtedly it is best to do a vaginal hysterectomy. The point I wish to make is that we must treat the case according to the indications and not by any strict or abstract rules. Furthermore, it will depend upon the kind of microbic infection that is at the bottom of the trouble.

Dr. E. Gustave Zinke, of Cincinnati, Ohio.—It is almost impossible to touch upon any point that has not been sufficiently illustrated by the previous speakers, but I rise simply for the purpose of adding my testimony in favor of vaginal section in some of these cases. Personally, I was very much surprised to hear Dr. Price and Dr. Deaver take the position they did. It is simply an evidence that men who made their reputation and have practised along a certain line become attached to it, and they are unable to see how it is possible for others to obtain good results in a different way. I fully agree with what has been said this afternoon and this morning, namely, that even Dr. Price and Dr. Deaver will not be able to save every case by the abdominal route. They are bound to have fatal results in cases which might have been saved had they pursued the vaginal route. I have seen enough of this practice to satisfy myself that the vaginal route is, in many instances, the safer of the two. I have operated through the vagina for the last three or four years, and have yet to see the first fatal result. In all but one instance the patients were cured; in that case a fistula already existed because of a previous rupture of the abscess through the vagina. I went directly through the vaginal fistula with a Palmer dilator and stretched the opening. Fully two quarts of pus escaped. The fistula still persists. If it does not close within a reasonable time it will be an easy matter to make an abdominal section and enucleate the appendages, if necessary, with much more safety than with all the pus present.

I recall an acute case in a girl, aged sixteen years, who had been treated for typhoid fever a long time and was slowly getting worse. When I saw her for the first time she had been sick three months. There was distinct fluctuation throughout the whole of the abdomen, which was much enlarged. I could not determine whether

I had to deal with a suppurating cyst or whether it was originally an appendicitis in which rupture had taken place retroperitoneally. At any rate, when I made a digital examination under chloroform I found a fluctuating swelling in the posterior cul-de-sac. This was perforated and fully one gallon of pus and fecal matter was evacuated. Almost five yards of a broad strip of iodoform gauze were then packed into the cavity. Later this was removed, the cavity irrigated, and packed daily until it had closed (in six months). The girl is well today. I doubt very much whether in that case, if the abdominal route had been selected, the result would have been the same.

I know of two instances where pregnancy took place within three months after evacuating a pelvic abscess through the posterior cul-de-sac. Both went to term and were delivered of healthy children without complication. In another case of acute abscess a complete cure resulted, and the woman has since borne several children. If this is not good surgery, then I do not know what it is to be a good surgeon. We should not be guided by hard-and-fast rules laid down by others, but rather follow our own judgment in each case.

DR. LEWIS S. MCMURTRY, of Louisville, Ky.—I did not hear the paper upon which this discussion is based, but I presume, after hearing a part of the discussion, that we are dealing with the surgical treatment of suppurative disease of the uterine appendages and the comparative merits of the vaginal and abdominal section. This subject has been very extensively discussed before this Association every year for several years, and I find it very difficult to discuss it at any length without repeating myself. My convictions upon the subject are strong, and at the same time I take it that the opinions of gynecologists have very materially crystallized in the last few years, and the differences that exist between us are not so pronounced as they at first appeared to be.

Three or four years ago—soon after Dr. Ségond, of Paris, made a visit to this country and did vaginal hysterectomy for suppurative pelvic inflammation—I went to Paris and spent two months with Ségond, Richelot, and Péan, and had an opportunity to see a great deal of this work, and I have done some of it myself. I do not see in the work of Ségond and Richelot, nor in the work I have done myself, such ideal and brilliant results as are frequently reported. The uterus being removed, the appendages oftentimes can be safely shelled out; but if coils of intestine are not thoroughly separated and appendicular complications dealt with the results will not be perfect.

In my remarks this morning I said that oftentimes there are two ways of doing the same thing and accomplishing the same end, but

it altogether depends upon the personal equation as to which method should be selected. See Professor Ségond do vaginal section, and it seems to be the easiest thing in the world. In five or six minutes the uterus is out, forceps applied, and the operation completed. So the expert American or English operator by suprapubic section shuts off the uninfected peritoneum with gauze; he is quick in his manipulations, reaches the field of operation, and shells out the suppurating appendages just as perfectly and with as great skill as those who resort to the vaginal route. The personal training of the operator will have a great deal to do in formulating his convictions upon this subject.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I wish to call attention to one or two points. I believe if we understood one another more thoroughly there would not be such a wide difference of opinion on the part of different men. I can perhaps illustrate this best by reporting a case or two. Within the last two weeks I was asked to see a patient, a woman, twenty-eight years of age. She has been married six years, but has no children. Her husband is a barkeeper. I was informed by her physician that she has never had an abortion, but did have at some time pelvic trouble which came on soon after marriage. In the last two or three years she had several attacks of pain in the abdomen which lasted a week or more, so that she was obliged to put herself under the care of a physician. During the last attack she had been indisposed for two or three weeks. Later she was confined to bed for five weeks with supposed typhoid fever. The day preceding my visit, in the evening, there was a consultation of three physicians, and a difference of opinion as to the diagnosis of typhoid fever was expressed. One of the consultants graduated less than five years ago, and his opinion that it was not typhoid fever, but something else, was opposed to that of the two older men, and it was agreed that I should see the patient the next morning. An engagement was made by telephone at eleven o'clock P.M. I went to see her early in the morning, and found that she had profound sepsis; she was as white as a sheet; there was profuse perspiration over the entire body; pulse was 130 when she was lying quietly in bed. The temperature was somewhat irregular, but elevated considerably at times. There was a tumor in the abdomen larger than a cuspidor. The belly was distended with gas, and there was no difficulty in outlining this tumor by combined bimanual examination. Fluctuation in the tumor could be elicited.

Within two hours of the time I saw her she was transferred to the hospital, and an hour later the abscess was opened per vagi-

nam. I do not believe either Dr. Price or Dr. Deaver would have opened that woman's abdomen. I do not believe any good surgeon would have done so, because it would have given the woman very little chance to live. I did not promise the members of the family that I could cure her. I said to the husband that probably the opening of the abscess would not affect a cure, and that a radical operation would doubtless be necessary later, as soon as her condition would justify it. We should say to these patients and their friends that the opening of an abscess may not cure them, but if it does, so much the better. If it does not cure them they should be instructed to return, whenever their condition necessitates it, to undergo a more radical operation.

It was only about two weeks after opening the abscess that I was asked to perform an operation on that woman with a view of curing her. She was eating three big meals a day and discharging pus freely, while her temperature was practically normal. She does not have any more chills, but she sweats every day or so. In her case I believe I shall have to do a section, but we generally do these sections when we can save life, and this we can do forty-nine times in fifty if we are careful in septic cases and are not too radical until we relieve the septic condition. I believe in removing diseased organs when it is necessary to cure a patient, but I do not believe we have a right to subject a woman (like the one I spoke of) to a section in that condition, because the probabilities are that she would die within a few days. Now, I believe she will get well minus her ovaries and tubes. Judging from her condition, she may have some pus on the other side, but I did not open that. I would not subject any woman to unnecessary trauma for the sake of doing a complete operation. The paper is along the line of good surgery, and the discussion thus far meets with my approval.

Dr. A. Vander Veer, of Albany, N. Y.—I can only speak from practical experience. Dr. Ricketts's paper is eminently in the right direction. I hope the Fellows do not understand that Dr. Price and Dr. Deaver would attack from above such cases as Dr. Dunning reported this morning. It is not doing justice to those men to entertain such an opinion. I do not believe Dr. Deaver claims to do anything more than most of us would do, and I would emphasize what Dr. Hall has said, that many of these cases will come back to us for a more radical operation, although Dr. Dunning seems to have great success, in that his patients remain well. We must save these patients if possible. We should say to them, What I am going to do now is to empty an abscess, and very likely you will require a radical operation later, when you are strong enough to bear it.

A short time ago I drove seventeen miles out into the country. I do not go out into the country very often. I drove over what is called the Brunswick Hills, the population being composed largely of charcoal burners. I went at the solicitation of a man who was interested in the wife of his farmer. He said the woman was very, sick and had been for six weeks, and he was afraid she was going to die. I took my wife with me. We had a lovely drive, and reached the place about three o'clock in the afternoon. I found a fine-looking woman, and her case was similar in many respects to those referred to by Dr. Dunning. There was an abscess presenting in Douglas's cul-de-sac ; it fluctuated distinctly ; her temperature was 103.5° ; pulse 120. I cleaned the patient as thoroughly as possible ; I had no trained nurse, and could not think of having her brought to the hospital. She was placed in proper position, and I made an incision and removed over a quart of pus. I then inserted a drainage-tube, washed the cavity out thoroughly, and left the patient under the care of her physician, with the understanding that she would have to undergo a more radical operation later on, when she was in better condition, and that she would have to be brought to the hospital to have it done. She made an uninterrupted recovery. My good wife said to me when we left the house : " You do not expect to be paid for this operation ?" I replied : " If I never get a cent for it I shall feel amply satisfied that I have relieved that poor woman from a great deal of suffering. If she gets well I shall feel amply repaid." The man paid the bill afterward. That patient has not come to my hospital for further operative intervention.

A year ago last summer I was up in the Adirondacks, and was asked to see a patient who had a mild attack of appendicitis. The physician said to me : " Doctor, I have a woman quite ill, and I am glad you are here. She has a pelvic abscess, which is discharging in various directions." Here was a case which illustrated the sad part of a patient being away off from the base of supplies and a good surgeon. The case was precisely similar to the other one. Six weeks after confinement a pelvic abscess developed which had ruptured into the peritoneal cavity. Nature had made an effort to wall it off and to relieve her, but she was in the saddest condition possible. She had a pulse of 160, with profuse perspiration. The woman lived only two or three days afterward. Here was a sad case—an operation not having been done early enough. We should impress upon the family physician, who is away off and out of reach of a consulting surgeon, that it is a comparatively safe thing for him to puncture such an abscess through the vault of the vagina. This man recognized

there was an abscess a week before; he could feel it. I said to him: "Why did you not open it? Why did you not let it drain through the vagina? Had you made an incision the condition of the patient would have been different." He told me that he never did any surgery. I think these cases ought to be dealt with by abdominal incision later on, but it is a little dangerous for us to advocate it here, because, as I have said before, what we say in these meetings is reported, printed, and read by general practitioners, and our advice is followed in many particulars.

We should not give the impression that every lesion about the pelvis must be dealt with from above. It is wrong. Such advice will do harm. We must be conservative in opening abscesses of this kind, and we know that after we open them the parts heal, the discharge continues no longer, but yet in many cases the patients are not well. They occasionally have an elevated temperature; they suffer at the time of menstruation, and require a more radical operation later on.

In making a careful bimanual examination in these cases if I find a thickened tube on one side or on the other I like to attack the case from above. The patient may be free from suppurative disease, but I would resort to abdominal section, place the patient in the Trendelenburg position, and complete my operation. In a word, I feel much easier as regards the result than if I attempted to treat the case by the vaginal route.

I would like to know how many ureters have been injured, what injury has been done to the bladder, by some of this vaginal surgery done by men who are not altogether clear in their work. I would like to know more as to the results of injuries done to other structures by the vaginal route. By resorting to the abdominal route we can see what we are doing.

A year ago last summer I learned a good deal from Jacobs in regard to his work, and he has changed his views with reference to doing work per vaginam. He says he learned not a little during his visit to America, and that much of the work he had done by the vagina would in the future be done by abdominal incision. We must occupy a median course in surgery. I suppose I am the oldest practitioner in this room. I have seen all of this line of surgery developed, and it has been a source of great pleasure and gratification to me. I take just as much interest in the profession now as I did thirty-five years ago, and I am delighted to see the progress that is being made from time to time; but I do believe that by pursuing a conservative course in most cases we are nearer to safety.

DR. RICKETTS (closing the discussion).—With all due respect to the remarks that have been made I put the question in this way: Pus in the pelvis; how to deal with it. The impression has gone abroad over the country that we must always attack these cases through the abdominal route, and some gentlemen who take part in such discussions as this are not frank enough in their statements. We want to know whether these men are so conservative as to attack nearly all of these cases by the vaginal route. If we allow the impression to go abroad that pus in the pelvis should always be dealt with through the abdomen it will have a bad effect, and it is time for us to call a halt. Let us give the profession to understand that there is a conservative spirit in this Association; that these cases are not dealt with always by the abdominal route, neither are they always dealt with by the vaginal route, but that every case is a law unto itself, and that the surgeon must be the one who shall in each individual case say that this must be primarily a vaginal incision with drainage, and when the patient is in better condition later on an abdominal section can then be performed. Cases in which vaginal incision is resorted to do recover and the women afterward bear children. Unquestionably we have abundant evidence to that effect.

I shall not forget my first case of tubo-ovarian abscess shortly after my return to Cincinnati from a visit to Mr. Tait, who taught me to attack these cases by the abdominal route. Had I drained that case first, after having made a vaginal incision, I would have saved the patient's life. She had a tumor as large as my head, full of pus. I undertook to remove it by abdominal section, but I infected her, and she died. We get better results in such cases by resorting to vaginal incision first, and then later doing a more radical operation by the abdominal route, if necessary.

The method of drainage suggested by Dr. Simpson is going to do much for this class of cases, especially those that are complicated with pus in the pelvis and those that follow operation or delivery. Surely much good will come from it. We have not drained enough in these cases. There is a middle ground. There is much for us to learn, and much that we must not forget, which is taught by old practitioners who drained pelvic abscesses.

ROUND LIGAMENT VENTROSUSPENSION OF THE UTERUS.

By D. TOD GILLIAM, M.D.,
COLUMBUS.

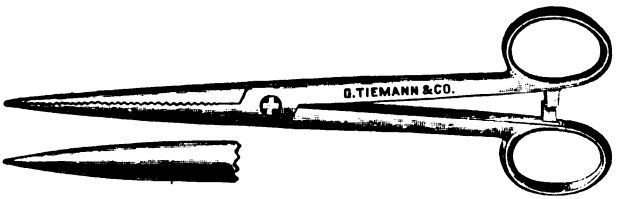
THERE is not, nor ever will be, an ideal suspension of the uterus in the sense that such shall meet all the requirements of a mobile organ, untrammelled in its functions and held within physiologic limits. The nearest approximation to this condition as applied to the retroposed uterus is obtained by the shortening of the round ligaments, as devised by Alexander; and the nearest approximation to an ideal operation for the shortening of the round ligaments is the modification of the Alexander operation, as devised and practised by Kellog. But this is not a suspension; it is simply an anchorage. The Kellog operation, while beautiful, safe, efficient, and easy of execution by the author of it, requires special tact and training for its execution, and will never become popular on account of the difficulty in finding the ligaments. It is not applicable to the large majority of cases demanding operative interference, in that it makes no provision for liberating the adherent uterus. Supplemented by abdominal section, whereby the adhesions may be overcome, it leaves nothing to be desired. But, as before said, the difficulties attending its execution will forever bar it from common usage. The intraperitoneal shortening of the round ligaments by doubling them on themselves is fundamentally defective, in that the weak and attenuated distal extremity of the ligament is relied on to sustain the uterus, which the stronger ligament in its primitive form was incapable of doing. The operator who has had much experience with the Alexander operation will tell you that not infrequently the distal extremity of the round ligament in old cases of retroversion is not larger than a violin string, and utterly incapable of giving any material support to the uterus. The Kelly ventrosus-

pension operation has much in its favor, in that it is easy of execution and usually stable in its effects, but it is open to the objection of rendering the uterus practically immobile if it is to be of permanent advantage. In my own experience with this method I have found that, whenever the uterus begins to draw away from the abdominal wall to form the so-called suspensory ligament, it is only a question of time until it sinks unrestrained into its old position. This arises from the fact that the adventitious tissue of which this so-called ligament is formed is neither endowed with life nor elasticity, so that it exerts no restraining influence on the uterus except that of a dead resistance when put upon the stretch, and will ultimately yield until it ceases to offer any resistance whatever by reason of its elongation.

The Kelly operation, as is now well known, oftentimes leads to serious embarrassment in pregnancy, and occasionally offers insuperable obstacles to parturition. My experience with the operation, extending over a number of years and embracing a large number of operations, has been rather favorable. I have found it in the main effective in keeping the uterus anteposed, and have seen less evil resulting from pregnancy and parturition than is generally accredited to it. Only today I found a woman in the hospital upon whom I had performed the operation four years ago, and who in the meantime had borne three children, the youngest being five months old. She stated in answer to my queries that she had experienced no bad effects in her pregnancies, and that her labors were without event. I found on examination that the uterus was firmly attached to the anterior abdominal wall, was natural in size and consistence, but presented one of the most extensive cervical lacerations that I had ever witnessed. The Kelly operation is beautifully adapted to the post-climacteric period, and to cases which have been rendered sterile by removal of the uterine appendages. The various operations for fixation of the uterus are open to the same objections as the Kelly operation, and most of them have fallen into disuse. The need of the hour is an operation that will utilize the natural supports of the uterus, that will insure a certain amount of mobility, that will adapt itself to the various functions of the uterus—pregnancy and parturition—that will be lasting in its results, and withal easy of execution. A long step in this direction was made by Ferguson when he swung up the

uterus by the proximal end of the round ligament. We know that the round ligament grows, *pari passu*, with the development of the uterus in pregnancy, and that it returns to its normal condition after parturition. This I have repeatedly verified by abdominal sections in pregnant women. Very recently I had to remove the uterus at the fifth month of pregnancy on account of multinodular fibroids, and in that case the round ligaments had developed to the size of the little finger and were elongated in proportion. Theoretically the same change should occur in the ligament which had been implanted in the abdominal wall. There are, however, to my mind, some objections to the Ferguson operation, in that he cuts the ligament and destroys its continuity. He also makes two incisions parallel to the median incision in the deeper layers of the abdominal wall, which have to be sewed up. He uses a sound in the uterus to support it while operating. This latter requires a trained assistant, and is not altogether devoid of possible injurious effect.

FIG. 1.



Perforating forceps.

On the evening of Saturday, November 18, 1899, I received a copy of the *Journal of the American Medical Association*, giving a description of Ferguson's method of suspending the uterus by the round ligaments. Thirty-six hours later I did my first case, and it was during the performance of this operation that I formulated and in part carried into effect the technique described below.

To facilitate this operation I had Tiemann & Co. construct for me a forceps which in general outline resembled the Senn compression forceps, but with sharp end and edges, so that it might be thrust through the tissues. This forceps is six inches in length, the blade being one and three-quarter inches long. For convenience of description I will call this the perforating forceps. I also had two other forceps constructed, which will be described further on.

The basic principle of this operation is that of invagination of the proximal portion of the round ligaments in the abdominal wall, as evolved by Ferguson. The successive steps of the operation modified by me are:

1. A median abdominal section. This section is from three to four inches long and at the usual site between the umbilicus and pubis.

2. Break up adhesions and bring the fundus forward, after which the patient should be placed in the Trendelenburg position.

3. Seize the Fallopian tube and bring it to the opening. For this purpose I have had constructed two long, slender forceps, something after the style of the bullet forceps, but with blunt ends instead of sharp teeth, in order to avoid wounding the delicate tissues. These are called button forceps. Guided by the finger, one of the forceps is introduced through the abdominal incision and the tube seized at its most convenient point and drawn into the opening. While thus held the round ligament of the same side is seized about one inch from its uterine extremity and lifted up.

FIG. 2.

Button forceps.

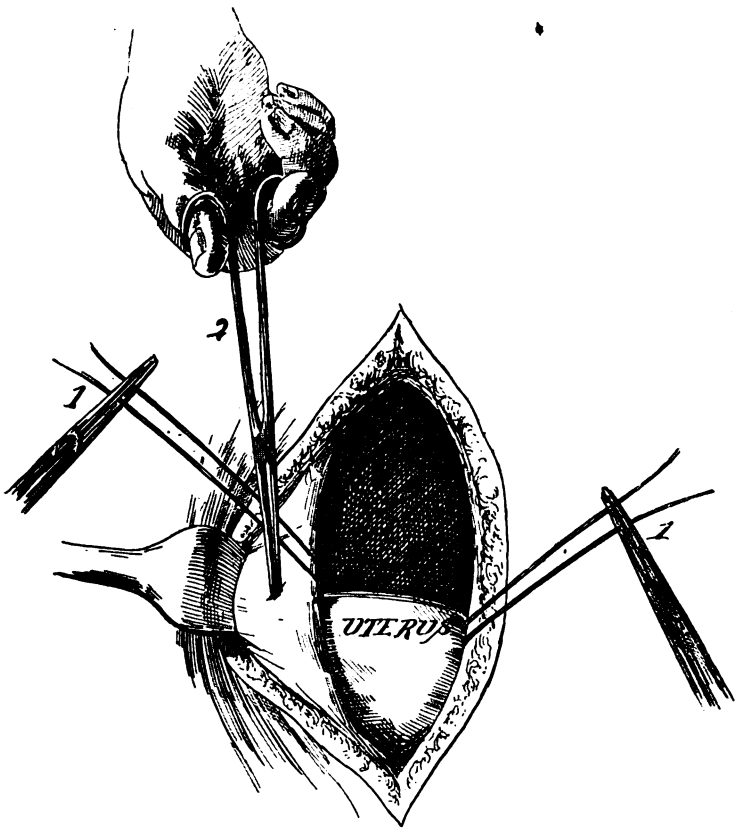
4. Carry a heavy silk thread under the ligament close to the forceps in such a manner as to include a little of the tissue of the broad ligament. This may be most conveniently done with an aneurism needle or ligature carrier. This forms a loop under the ligament, which is not to be tied, but after withdrawing the needle the two ends of the thread are brought out of the abdomen and secured in the bite of a snap forceps.

5. The forceps holding the tube and round ligament are now removed.

6. The other round ligament is secured in the same way and the ends of the thread brought out of the abdomen and held in the bite of another clamp forceps.

7. Retract the skin and superficial fat on one side until an inch or more of the rectus muscle is exposed. For this purpose a retractor may be used, but, as the tissues glide easily over each other, I prefer to push them back with the thumb, with two fingers within the cavity and applied to the peritoneal surface. The

FIG. 3.



The perforating forceps applied to the surface of the rectus muscle in the act of being thrust into the peritoneal cavity.

object of this retraction is to expose a point through which the forceps may be thrust into the peritoneal cavity. This point should be one inch external to the margin of the wound and an inch and a half or two inches above the pubis.

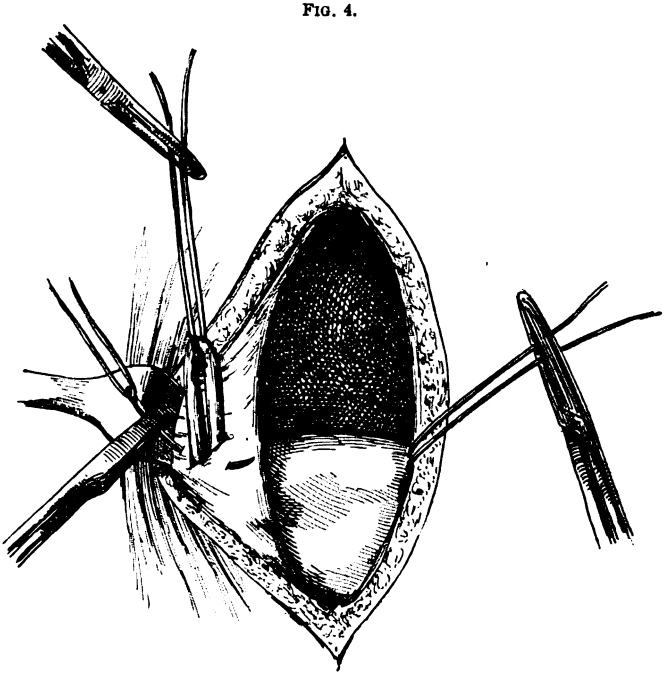
8. Thrust the perforating forceps through into the peritoneal cavity and seize the thread which holds the round ligament. The

two fingers already within the cavity guard the instrument in its passage and place the thread within its jaws.

9. Remove the clamp forceps from the thread. These are lying on the surface of the abdomen.

10. Withdraw the perforating forceps. This brings with it the thread, and the thread in turn brings the ligament through the perforated wound in the abdominal wall.

FIG. 4.



The perforating forceps is withdrawn, bringing with it the round ligament.

11. While the ligament is held taut, fasten it into the wound. This is done by a few catgut sutures passed through its base and including the tissues on either side the entire thickness of the wall.

12. The exposed free loop of the ligament is now scraped lightly with the edge of the knife and tacked down with catgut. This is intended to prevent retraction.

13. Treat the opposite side in the same manner.

14. Close the median abdominal incision.

I have now had eight cases upon which I operated after this method, and find some defects which I hope and expect to remedy.

First, I find that suppuration occurs in too large a percentage of the cases. Whence this suppuration proceeds I am as yet unable to say. I have suspected that it came from the subcutaneous fat which is exposed and subjected to more or less handling. To avoid this I have decided in the future to lift the sheath of the rectus muscle and implant the ligament on the surface of the muscle itself. It is possible that the suppuration comes from the ligament, either by reason of its unnatural position or through jugulation of its vessels. On several occasions I have seen the ligament swell up and become livid after suturing, which I ascribed to an extravasation of blood from needle puncture or to compression of the vein by the suture. There is no good reason for believing that the suppuration results from transplantation of the ligament, as this is a part of the technique of the Kellog operation, as well as others which have been practised for many years. If the ligament is the seat of suppuration it does not seem to affect it in its new relations, as I have always found the uterus *in situ* after the patient has recovered. I shall endeavor to avoid compression of the vessels in my future operations by placing the stitches parallel to the long axis of the ligament. Another defect in my operation as originally devised is gathering up all the slack of the distal extremity of the round ligament, sometimes amounting to three or four inches. This in some instances gave rise to a tensive, drawing feeling that was quite uncomfortable. In the future I shall not take up more than an inch or an inch and a half, thus leaving the distal end slack.

In conclusion, I will say that barring the suppuration and the tensive feeling due to too much tension on the distal extremity of the ligament, which in every instance passed off in a few weeks, the results have been admirable. It is too soon to say how this new operation will affect pregnancy and parturition, though on theoretic grounds it should offer no obstacle to either. Should it prove what it promises I bespeak for it an extended and useful career.

DISCUSSION.

Dr. W. E. B. Davis, of Birmingham, Ala.—I have been much interested in the operation recommended by Dr. Gilliam since he presented it to the profession some months ago. It occurs to me that an opening in a direct line through the abdominal wall would subject the patient to the risk of hernia. The intra-abdominal pressure would be in the direction of this opening, and the tendency of the ligament would be to enlarge it. In other words, the pressure would open the canal. This objection is entirely theoretical, and may be without foundation. I think that an oblique opening would obviate this danger without adding to the difficulties of the operation.

Dr. A. Goldspohn, of Chicago, Ill.—I am pleased to see any operation of this kind that deals with the round ligament as a way of escaping from the category of operations which most of us recognize as pathologic surgery. The only question is, whether it is the best way to deal with the round ligaments. I have no very positive criticism to make, but I have doubt as to the permanency of the results. We do not seem to know exactly what the round ligament is for in the ordinary healthy woman; we think it is for holding the uterus forward. It is certainly not the only thing that does it in all cases. The round ligament has great capabilities which we can take advantage of and use best, as the essayist admits, in shortening the ligaments and in anchoring them in a forward direction. But that is poising the uterus forward and not hanging it up by them. This they were not intended to do, considering the anatomic indications, and the work of Alexander goes to show that when the round ligaments are used for a suspensory purpose rather than for simply poising the uterus forward, then the recurrence of retroversion is apt to follow. This explains the frequent recurrences of retroversion which I have mentioned in connection with Zweifel's work. We must bear in mind broad principles, and that the thing that holds the uterus in anteversion almost constantly, is the aggregate sum or direction of intra-abdominal pressure. I use that expression because intra-abdominal pressure in a strictly scientific sense is a complex subject. But there is such a thing as an aggregate sum or direction to it, and this aggregate, in so far as it affects the uterus, should be from the posterior side to hold it forward. Whether the uterus, being suspended by these ligaments in this way, will be anteverted, so that intra-abdominal pressure will do their work for them most of the time, as it does under normal conditions, I question; and, if intra-abdominal pressure is not

invited to do this, then no round ligaments will be able to hold the uterus in opposition to this overpowering force.

The essayist made a remark about the slenderness of the round ligaments as found in the Alexander operations. I have operated on more than 190 cases, and such a thing as the round ligament being the size of a fiddle-string I have never seen.

DR. GILLIAM.—My remarks were not directed to the Alexander operation, but had reference to shortening of the ligaments by folding them on themselves intraperitoneally, thus making them slender.

DR. J. HENRY CARSTENS, of Detroit, Mich.—The operation described by Dr. Gilliam seems quite feasible. I rather like it, because it is necessary to open the abdomen to see what we are doing, and you can do anything that is necessary. You can shorten the ligaments. For some reason or other I do not get the simple, easy cases to deal with. The general practitioner treats them with pessaries, tamponades, supports, etc., and generally succeeds in relieving them. When, however, he has a bad case to deal with, he either sends it to you or to me. I doubt whether any of us get these easy cases as a general rule. I have heard remarks made about removing the ovaries and tubes and then doing an Alexander operation. It seems to me it is perfectly absurd to leave an old uterus in such cases. In those cases that necessitate the opening of the abdomen, particularly when they are near the menopause, it is better for us to do a vaginal hysterectomy, removing the uterus, ovaries, and tubes. This can be done with very little danger, and the woman after that is *well*. If we simply do the operation of shortening the round ligaments the heavy uterus will sooner or later sag, and the woman will complain as much as she did before, and you will have to operate again. I would enter a plea, therefore, for thorough operation in this class of cases. It is a serious thing to open a woman's abdomen two or three times. If we operate in the first place and do a radical operation, removing the pathologic conditions, we are reasonably certain that the patient will be cured and that she will not require a second operation.

DR. CHARLES GREENE CUMSTON, of Boston, Mass.—I would like to ask Dr. Carstens if I understood him to say that he would do a vaginal hysterectomy for prolapse?

DR. CARSTENS.—No, not in ordinary cases. I would not hesitate to do so in exceptional instances or rare cases.

DR. CUMSTON.—Please define what you consider a rare case of vaginal hysterectomy for prolapsus of the uterus?

DR. CARSTENS.—Well, let us take a uterus that comes down, the woman has had a narrowing of the vagina, and perhaps a repaired

perineum. If as the result of vomiting the uterus comes down again, and we have to operate once or twice to replace it, there is nothing that will give the woman permanent relief except to remove the organ.

Dr. Rufus B. Hall, of Cincinnati, Ohio.—I am greatly interested in the method of operating that has been presented this morning, and I feel that I cannot let the subject pass without making a few remarks. When the essayist published in the *American Journal of Obstetrics and Diseases of Women* this method of shortening the round ligaments, a copy of the journal came to my table one morning at about half-past eight. On that morning I was to do a section on a woman who had what proved to be a small dermoid tumor about the size of an orange, which was situated behind the uterus. She was a school-teacher by occupation, thirty years of age, and unmarried. She had been under the care of physicians off and on for five years for a retroverted uterus. I cannot believe from the clinical history that she had a tumor all this time. She had a flail-like, non-adherent uterus. In this number of the journal I read Dr. Gilliam's article, and examined the illustrations, which resembled very much those that he has shown today. I therefore decided to fix the uterus of this woman forward. After reading a description of the operation, and examining the drawings and instruments for this purpose, I decided to do this operation, but without the special instruments Dr. Gilliam has devised for the purpose. Within thirty minutes after reading the article I was in the operating-room. I removed a dermoid tumor adherent to the side of the pelvis; the uterus was retroverted down by the side of it, making a mass the size of a small cocoanut, including the uterus and the tumor. She had a good ovary on the other side, and I wanted to save it. I did the operation, modifying the technique a little, and I must say that I have never had a patient who showered so many blessings on my head as this one for the relief I have given her. The operation was very satisfactory indeed. Since that time, in every case of retroverted uterus, where I have had to open the abdomen for the removal of one ovary, if I could leave the other ovary or a piece of it, I have done this operation. If I can save part of an ovary in these cases I do so for the purpose of carrying on the function of menstruation, excepting in the gonorrheal cases. I have operated after the manner of Dr. Gilliam from twelve to fifteen times.

Theoretically, one might object to the method on the ground of the patient having a hernia subsequently, but these herniæ will not be worse than incarcerated bowel behind anterior fixation. So far I have not had an accident, complication, or an annoyance, except in one instance in which I had suppuration at the point of fixation of

one of the round ligaments. I evacuated a dram or so of pus due to buried catgut on the fifth or sixth day after the operation, but this did not complicate the ultimate result of the case. The uterus in every one of the cases is in its normal anteverted position, and perfectly movable. The operation is quickly done without any extensive damage to the parts, and that part of the technique of the operation can be completed in less than five minutes. One can do the operation more quickly than he can describe it. I have followed the plan suggested by the essayist from the start, except the use of his specially devised instrument. In the place of it I use an ordinary, sharp-pointed, hemostatic forceps, and after dissecting back the skin and the superficial fat on top of the fascia for about an inch or an inch and a quarter from the median line, I then take a knife, make an incision through the fascia about one-quarter of an inch in length; through this opening I pass the forceps into the abdomen with the finger underneath, catch the string, and pull it back. After this you can pull up the ligament easily. Then, in place of stitching it with catgut, I have taken one stitch of silkworm-gut, passed it through the fascia, through the ligament and across the two ends, and brought it out through the abdominal fat and skin half an inch apart. The ligature is crossed between the fascia of the muscle and fat. I tie it over a thick piece of gauze, as thick as the finger, rolled into a roll, and do the same on the opposite side. I take the tension off of the ligament, according to the distance we wish to bring the uterus forward. The external part of the ligament rests flat against the abdominal wall from the point of puncture to the external inguinal ring. There is plenty of room between the anterior abdominal wall and the front of the uterus to prevent strangulation. What the ultimate result in these cases is going to be I do not know, but I do know that this method gives satisfactory primary results, and it certainly cannot be worse than ventrofixation or ventrosuspension, and it promises theoretically to do better. When the abdomen must be opened this is certainly an ingenious method of fixing the uterus, and it is one I am going to follow until I can find something better.

Dr. Richard Douglas, of Nashville, Tenn.—I have had experience with this operation in three cases only, and I have been led to employ a slight modification in the technique. When the ligature that is around the round ligament is brought through the peritoneum and through the muscle and secured, it practically embraces only peritoneal tissue. The muscular tissue is so soft and yielding that it does not give a very firm fastening, and we practically have peritoneal suspension of the round ligament. I recognize the fact that it is best

to implant the round ligament next to the muscle, as the author has advocated; therefore, I leave the round ligament beneath the sheath and bring the ligature through the sheath and tie it over. I resorted to that method in the three cases in which I did this operation. When the article of Dr. Gilliam appeared in the *American Journal of Obstetrics and Diseases of Women* his operation appeared to me to be very feasible. I had practised ventrosuspension so long that I had looked at that way of doing things.

We meet with cases of small uteri in which we cannot bring the uterus up without great tension on the abdominal wall, and I must say that the patients upon whom I have performed ventrosuspension have suffered much more pain than after operations of greater magnitude.

Dr. Hall's condemnation of ventrosuspension is hardly warranted. During the last ten or twelve years I have had quite an extensive experience with that operation. I have delivered women for whom I had suspended their uteri. After confinement the organ has been found in normal anterior position. I have confidence in the operation. I have never had any complications following it. I am free to confess that it is a mere makeshift, and I am willing to accept the operation brought forward by Dr. Gilliam as well as the one advocated by Dr. Goldspohn. I have kept up with his work, and he has evolved and perfected an operation which we can adopt with great advantage in certain cases. I can confirm what he has said with reference to reaching the posterior surface of the uterus and Douglas's cul-de-sac with greater ease, yet I wish to say that I cannot do as good work with one finger as I can with two. When it is necessary to do much work upon the appendages I much prefer making a central incision.

Dr. Gilliam (closing the discussion).—I have been looking around for a long time for some kind of operation by which we could suspend the uterus, so that it would not interfere with gestation or with parturition, and I wanted at the same time to find something that was simple and practicable,—an operation that every surgeon could do,—and when this came to me I was very much pleased. I was glad. I had often done the operation of ventrofixation and ventrosuspension by the Kelly and other methods. I have often done it when I felt self-condemned for doing it, yet there was no other recourse. I was glad to utilize the natural supports of the uterus with an operation that is easy of execution, which gives the results we are looking for. Anyone who can do abdominal section can perform this operation. He can do it quickly. It does not take much time. Of course, as we

have not been practising the method for more than a year, we have had not had opportunities of witnessing the results in pregnancy; we have not had the opportunity of seeing whether any untoward results will follow this method. But, theoretically, there should nothing of this kind occur. The round ligament is just as capable of undergoing evolution and involution when it is implanted in the abdominal wall in the manner described as it is in its natural condition.

As to the objection made by Dr. Goldspohn, that it is a suspension of the uterus, it is so only in name. I wish to say that it is not in reality a suspension, if you do not bring the ligaments too *taut*. If you take an inch and a half from the uterine cornu, as I recommend, there is no suspensory force on the ligament whatever. The ligament acts as a guide in its normal function. The object of the ligament is not to hold the uterus fixedly and immovably in a certain place, but it is to give the uterus a little hint when it begins to go beyond a certain line. In other words, the object is to give a little hint that the organ is getting beyond the vertical line, and just the slightest resistance will check it in its course, the respiratory movements will bring it back again, and the intra-abdominal pressure will keep it there. Anchored in this way, that is all the ligament does or that is expected of it. It does not hold up the uterus at all; the uterus lies forward on the bladder, and it is the intra-abdominal pressure that holds it there. We can pull the uterus clear down, with the cervix outside of the vulva, and it will gradually crawl up into the pelvis and assume its normal position. It is a suspension in name only.

The next thing for consideration is hernia. It has been suggested that we may have a hernia following this method of operating. I have not the remotest idea that there will be a hernia at the site of this wound. The forceps is very sharp and is pushed right through the abdominal wall; it does not sever one fiber of the muscle. It is the muscle that provides against the formation of a hernia. There may be a penetrating wound through the abdominal wall without severing anything except the peritoneum itself, and that soon heals up. Then you gather together the structures around the ligament with your suture in such a manner that it makes a sealed cavity, and it brings the muscular fibers in conjunction with, and in co-operation with, the ligament itself, in order that it my hold the parts. The muscles being elastic and contractile and capable of undergoing movements, they will recover themselves after any counter-movement has been impressed upon them. In this operation we have healthy tissue as opposed to dead or scar tissue. Live tissue is forever regenerating itself. Muscle is the chief bulwark against hernia. But the muscle

must be ensheathed to keep its fibers in apposition. If the integrity of the sheath be destroyed the fibers may separate and hernia result. The fascia or aponeurosis cannot in itself antagonize the intra-abdominal pressure. If the muscular fibers separate the fascia in time yields and is carried before the hernial protrusion. In this operation the sheath is not destroyed, the muscular fibers cannot separate, and hernia cannot result. The aperture is so small and usually so sealed that it is not worth while to consider the formation of hernia in connection with this operation.

There is one point, however, that I wish to call your attention to, and that is that you may have a retrodeviation of the uterus without any marked lengthening of the round ligaments. There is not necessarily much difference between the length of the round ligament required for a retroversion and that required for the normal position of the uterus. If one will consider the point of attachment of the round ligaments in their relation to the uterus, it will readily appear how the uterus can swing in the arc of a circle from before backward without any more tension on the ligaments than their natural resiliency will allow. If a line be drawn from the internal inguinal ring to the proximal end of the round ligament in anteposition and between the same points in retroposition, the difference in length between the two lines will be found to be very small. I have come across two cases since I have been doing this operation in which I did not utilize the round ligaments because they were so taut. To bring them up through the abdominal wall, even if it were possible, would make tension and suspension, which is to be avoided. In these cases I resorted to the old Kelly method of suspension. Furthermore, if I were to have a case in a woman who had passed the climacteric, or a woman from whom the tubes or ovaries had been removed, I would not give the snap of my finger between this method and the ventrosuspension of Kelly.

As regards the ultimate consequences of the Kelly operation, I have not seen the bad results that a great many other operators have witnessed, and I have been practising it for a long time. I have only two cases in which the uterus has gone back. One case was followed immediately by prolonged and profuse suppuration. This was due to some catgut suture that had been tampered with. In the other case the operation ought not to have been done. One of the patients was a woman from Chattanooga, Tenn., upon whom I operated two years ago. She came back to me about six months ago, and I found that her uterus had been retrodisplaced.

DR. CARSTENS.—I believe you said that in all cases where the tubes

and ovaries have been removed you would do this operation, and you stated after that that you did not care whether you did the Kelly operation of anterior fixation or the one you have suggested. Now, I want to ask you a question. In a case where a woman has a retroverted uterus and it gives her trouble, and she is already unsexed, would you open the abdomen and do a ventrofixation in preference to a vaginal hysterectomy?

DR. GILLIAM.—Yes, I would, unless I found the uterus so diseased that it would not be worth while keeping it there. I did not say that I would suspend the uterus in all cases where the appendages are removed. I would not do suspension by any method in the absence of positive indications.

DR. CARSTENS.—What good is the uterus if it is not very much diseased in such a case after the ovaries and tubes have been removed?

DR. GILLIAM.—I do not believe in mutilating a woman any more than is necessary, and I believe that the uterus has some function other than that of child-bearing. I believe there is something about the uterus which is beneficial to the woman, whether it be a child-bearing organ or not, and I will not sacrifice the uterus unless I find it markedly diseased and I am compelled to remove it for the benefit of the patient. Furthermore, Dr. Carstens has intimated that there is no need of suspending the uterus in a case where the tubes and ovaries have been removed, because the shortening of the broad ligament will hold it up. My experience does not confirm that. I have seen cases in which the uterus has come clear out of the pelvis after these operations.

OBSERVATIONS RESPECTING MALIGNANT DISEASE OF THE PELVIC ORGANS.

By AUGUSTUS P. CLARKE, M.D.,
CAMBRIDGE.

In presenting the subject of malignant disease for consideration I am not unaware that much has by careful observation been already offered; and though no specific micro-organism has as yet been fully proved to be the correct cause of cancer, I nevertheless feel that we have assurances, through the increased interest which has of late been taken in the investigation, that the mystery enshrouding the nature and origin of this peculiar morbid process will ere long be unfolded.

Emmet early called the attention of the profession to the fact that a neglected or an unhealed lacerated cervix was liable to become the seat of cancer. The recognition of the significance of such lesions marked an important event in the progress of gynecic surgery.

In referring to my notes of pelvic cases of malignant disease I have often noticed with what frequency uterine cancer has had its starting-point in such injuries. Cancer usually has its seat of development in the epithelium, sometimes in the squamous and at other times in the cylindrical cells. Its occurrence for the most part takes place after the patient has had several children and before she has become far advanced in age. The exposure of the mucous lining to continued and repeated irritation hastens its advent. The close observer cannot help noticing how easily the function of the mucous lining becomes disturbed or perverted, whether the influences be set up in the squamous epithelium of the vaginal portion of the cervix, in the cylindrical cells of the cervical canal, or in the epithelium investing the glands of the cervix. The delicate, sensitive, or unresisting character of these highly organized parts renders them peculiarly prone to take on

serious alterative changes or liable to be affected by the influences of cancerous invasion.

On the other hand, the appearance of sarcoma is usually of a later date. It may occur in the mucous lining of the uterus or in the parenchyma of that organ. In whatever form it may present itself, and especially in the fibrosarcomatous variety, it seems to be the result of degeneration rather than the transformation of tissue; or, in other words, the structures where its greatest development takes place manifest a tendency to take on increase of growth of fibrous tissue, at the expense of the integrity of the normal element.

Why this change takes place may be understood by appreciating the fact that the uterine tissue, as well as other portions of the sexual organs in the primitive types, have their origin in points where the skin fibrous, and the intestinal fibrous layers, have their more immediate connection. The interruption of function from cause determines the further growth along the lines of the earlier forms of animal life.

So far as malignant disease has invaded the vagina, consensus of opinion justifies the statement that the involvement of that portion of the genitalia with the disease in question is almost entirely the result of extension.

Cancer of the corpus uteri I have occasionally met with. The cases I have recorded have been the result of endometritis and of its allied conditions. One case which I have recorded impressed me very much; this occurred in a patient who was a teacher in one of our public schools. Her age was fifty-one years; she was a well-developed woman and was never married. She had suffered from dysmenorrhea, though not of the aggravated form, and had received local and general treatment for the same. Her increased suffering had at first been thought to be due to the presence of a small fibroid; the result, however, showed that the disease was primarily cancerous, and must have been brought on or intensified by inflammation of the utricular glands of the uterus and by pressure from tight-lacing.

Not long since I was called to a fatal case of sarcoma of the abdominal and pelvic organs. The autopsy showed that the disease undoubtedly began where excessive pressure had been repeatedly endured against the abdomen while the subject of it was em-

ployed for some years in carrying heavy packages up and down flights of stairs. Cancer affecting the broad ligament has usually been the result of extension of the disease from the cervix to the corpus uteri.

In one case my records show that the left broad ligament was apparently the original seat. The only explanation that could be offered was that there was near that site a considerable fibroid growth which had undergone calcareous degeneration, and which exerted more or less pressure or irritation upon that particular part.

In another case that I met with was a cancerous deposit in the right ureter toward its renal portion. There was, however, a cancerous invasion of the cervix uteri, but no perceptible change was observed in the uterine body along which the disease could have extended, nor were the lymphatics involved. There was on that side a well-defined iliac aneurism, which had forced the peritoneum before it and had seriously encroached upon the ureter. The condition of things there found evidently hastened the cancerous invasion of the ureter.

Cancerous involvement of the bladder from extension of the disease from the cervix or from the lower portion of the uterus is not uncommon, but cancer about the meatus is not so frequently met with.

In a case to which I was called in consultation the patient had given birth to a child but a few weeks before. She had begun to suffer more or less from retention of urine, accompanied with severe pain and irritation about the external opening of the urethra. Examination showed a slightly raised fungoid mass about the urethral meatus and just below it on the vaginal aspect. Some difficulty at first was experienced in determining the exact nature of the condition, since there were no involvements of the glands and no cervical or other original seat of invasion. Further examination microscopically and otherwise gave positive assurances of the cancerous nature of the growths. Not long after that the patient entered the city hospital, but no surgical measures for the removal of the morbid mass were deemed justifiable. The patient returned home and died within a few weeks of urethral cancer involving the vagina. The lymphatics toward the close of life had become extensively involved. The history of the patient showed that she

had suffered, even before her last pregnancy, from vesical and urethral disturbances.

Cancer having its original seat in Douglas's posterior cul-de-sac may occur. A case came under my care in January, 1898. The uterus was displaced forward and the rectum was forced to the right; the lymphatics became implicated.

Small sarcomata occurring in the pelvic connective tissue may be productive of misleading symptoms. I have seen at least two such cases. One of these was exceedingly difficult to diagnosticate, and its true nature could not be clearly established until after noting in detail the deficiency of the operation of all other possible factors.

Formerly I was accustomed to regard cancer as a disease consisting originally of different varieties. More recent observation has impressed me that such terms as medullary, scirrhous, colloid, and the like should be excluded from the division or should be employed only when speaking of the general appearances of cancer, and not of distinct classes. Cancer has its starting-point in the epithelium, whether this be the stratified, squamous, or columnar, or in the epithelial cells of the cervical glands. In this last-mentioned site the cancer may be hard (scirrhous or adenoid), not because the cancer is of a different variety, but on account of the morbid influence of the affected imprisoned epithelial cells on the surrounding glandular structures. It has long since been determined that the various forms assumed by epithelial cells, depend almost entirely on mechanical pressure exerted upon them by corresponding and surrounding parts. The hexagonal forms of the cells of the comb produced by the honey-making bee are effected also by mechanical influences. The varieties in the shape of sarcomatous cells have undoubtedly been the outcome of physical influences to which the parent bodies were long subjected. As the epithelium is a layer of protection to the structures which it invests, it necessarily becomes exposed to many morbid influences. Such cells, when their integrity has been overcome through traumatic lesions, bacterial or cancerous invasion, readily furnish, notwithstanding any peculiar form they may possess, centers or foci for the malignant deposit.

Cancer of the ovary or of other portions of the adnexa may occur as a secondary to a primary point of invasion. The epithelial cells, being invaded by the cancerous products, sometimes quickly yield

to the destructive agency. Cases of this kind I have not infrequently seen. The route of transmission is usually along the course of neighboring lymphatics. In one case the infected cells were conveyed directly through such lymph channels; in other cases the metastasis took place by the direct infection of the epithelial cells of the ducts of the lymphatics. In a case seen a year and a half ago there was found a solid cord-like mass of the lymphatics extending from the junction of the internal cervix and the corpus uteri to the right ovary. It is no uncommon occurrence to observe metastasis to the liver or to the spleen to take place after excision of a cancerous breast.

The fact that cancer cells may invade or attack the epithelium of new-formed growths, such as a cystoma, myxoid cystoma, dermoid cyst, or any cystic development containing endothelium, shows the importance of taking measures for the early removal of these formations before degenerative changes shall, by such involvement, have extensively occurred.

I was invited by Dr. Marcy to see a case in which was to be removed a growth from an ovary. The mass was about the size of a hen's egg; it was cystic, and gave distinct evidence of cancerous infiltration of the epithelium of the Graafian follicles. The specimen was extremely interesting as illustrative of the peculiar manner in which the malignant processes sometimes have their starting-point. In this way the pelvic peritoneum, the mesentery, and the omentum, either on the free surfaces in the epithelium or in the epithelium of the glandular portion, become the seat of cancerous manifestation.

The morbid development undoubtedly arises at times by abnormal proliferation of the epithelium, from its basic point of origin to the deeper structures within. Though not adopting the theory as once propounded by Cohnheim, I have nevertheless noticed that a plentiful development of the vascular tissue surrounding the implantation of cancer, has been favorable to the growth and extension of such neoplasms.

The pain complained of in cancer is occasionally very great; at other times it is not severe, and there may not be much tenderness. The amount of suffering from cancer frequently depends very much on the situation of the growth, whether it involves the glandular epithelium, and thus causes undue pressure on plexuses or portions

of important nerves. I have met with cases in which the greater portion of the uterus had become affected, and still there was scarcely any pain. On the other hand, a small growth embracing the epithelial cells of the cervical glands I have known to produce most disturbing symptoms. After the general cachexia has become manifest, the implication of the nervous system through the deteriorating effect upon the blood-supply may give rise to exceeding suffering.

Cancer of the bladder is not altogether an uncommon form of malignant disease encountered. The majority of such cases occur as secondary to cancer of the cervix or of the lower segment of the uterus. Uterovesical fistula may be one of the sequelæ of the attack. Such cases, however, are of the advanced forms, and are often inoperable.

The cases which call for special consideration are those of the villous type. A few cases of the chronic variety of this class I have chanced to meet. One of these occurred in a woman who, when I was first called, had already passed the menopause. She had been a nurse for some years; she had grown stout, but within the past two years had lost flesh. She had been troubled more or less for some ten years with painful urination, accompanied at times by the passing of small quantities of blood. Under ether the meatus urinarius and urethra were dilated; digital examination revealed a partially villous mass, situated slightly posterior to the opening of the right ureter in the bladder. Thorough curetment and the employment of the galvanocautery effected for a while considerable relief. There was, some eighteen months afterward, a recrudescence of the disease, which at last could not be overcome.

Cancer of the rectum is another form of malignant affection that can sometimes be stayed in its progress by operative treatment. In those cases in which the sphincter ani is not involved, excision of a portion of the rectum and the employment of Murphy's intestinal button, after removal of the coccyx and lower section of the sacrum, can sometimes be advantageously resorted to. This was done in some of Dr. Marcy's earliest improved operative cases of rectal cancer in which I was invited to assist, and the operation after this manner proved a typical method of surgical procedure.

In the treatment of cancer the instituting of proper methods for

reaching an early and a correct diagnosis cannot be too strongly insisted upon. The only effectual radical method of treatment worthy as yet of that name is by excision or by the liberal employment of the actual cautery. The partial removal of the uterus for its extensive invasion by malignant disease will not suffice. Nothing short of total ablation of the organ and its appendages, either by the abdominal or by the vaginal route, or by a combination of both, will prove of much continued benefit. I do not mean to say, however, that in some cases of most unpromising type curetment and the removal of sloughs may not be helpful or justifiable procedures; but such operations, or, rather, expedients, cannot be expected to prevent an almost immediate return of the morbid processes. They can only be regarded as provisionally esthetic in their results.

The fact that uterine or pelvic fibroids and fibromyomata in their retrograde processes take on malignant or sarcomatous transformation is, I believe, coming more and more to be recognized. The necessity of keeping a close watch for the changes which they may assume will, therefore, become obvious. Both the round and the spindle-shaped celled sarcomata are liable to originate in such benign fibroids; their nodules or projecting masses develop without the investment of regular capsules. They subsequently undergo disintegration and present unmistakable evidence of malignant deterioration. Cases presenting the phases of this character have come to my observation. Total excision of the part embracing the neoplasm in its earliest stages, when possible, will afford the most satisfactory result.

DIFFICULT AND OBSCURE PUS CASES IN PELVIC SURGERY IN WOMEN.

By WALTER B. CHASE, M.D.,
NEW YORK CITY, BOROUGH OF BROOKLYN.

THE sources of infection resulting in pelvic abscesses are multiform; yet it must be regarded as certain that in a majority of cases the vagina is the principal portal for the entrance of pathogenic organisms. Impure sexual intercourse, the impurity being transmitted from the male, stands in causal relation in the cases most frequently met with, gonorrhea being the most common factor, with its train of symptoms, the scope of which involves some of the most interesting phases of medicine and surgery. Next in order of frequency are those cases which follow miscarriage and labor at full term. The sources of infection are most often easy of conjecture, though not always so easy of absolute proof. Usually they follow some exposure from without, which finds its nidus within the vagina; then the endometrium, following on, if not checked, to serious local, and finally grave systemic involvement. Again, infection of the pelvic contents within the broad ligament or pelvic cavity, when due to rupture of an ectopic tube and to hematoma of the vagina from pressure of head in childbirth, or other trauma, are the primary causes of a train of symptoms which lead up to dangerous proportions. Inflammations of the appendix, and of structures contiguous to it, comprise a large class of cases from which infectious processes emanate and which demand recognition.

Again, the escape from the intestinal tract, at points where there is denudation or ulceration of the mucous surface by which the bacillus coli communis penetrates the pelvic structures, eventuates in abscesses. A case of this nature is among those reported.

In another class of cases the suppurative process may be due to tubercular or malignant deposits, resulting in softening of the

structures involved. Sometimes the exact route of the invasion may not be determinable, but the destructive processes are none the less persistently potential for mischief. It may safely be declared that in no class of cases is the skill, judgment, and resources of the surgeon subjected to a more rigid test.

Diagnosis. The diagnosis of pus in the pelvis may be easy or difficult.

It is not my purpose to discuss the methods to be adopted in which the symptoms are plain and unmistakable, but rather to allude to some features which present themselves into which the element of doubt enters. The question of time in this connection is of prime importance, in which conditions, acute or chronic, manifest themselves. In acute inflammatory attacks the question of suppuration is usually simpler than in subacute or chronic forms. Here the physical signs and rational symptoms must be carefully studied. Here touch through the vagina, and perhaps the rectum, with thorough bimanual manipulation, goes far to clear up the diagnosis. Tenderness is not only thereby determined, but under favorable conditions fluctuation may be found, and yet fluctuation does not always imply presence of pus. Cystic growths and circumscribed serous exudates, recent hematomas, and amyloid and other degenerative processes may show this symptom very plainly.

The difficulties which beset investigation are multiform, among which may be mentioned a thick deposit of fat in the abdominal walls and omentum, and distention of the abdominal and peritoneal cavities by gas. So, too, must the question of fecal accumulation be taken into account. Inflammatory exudations, wholly or partially organized, may give evidence of softening at points where fluctuation cannot be distinguished. Most often these develop in the depth of the pelvic cavity, at other times within the broad ligament or in Douglas's cul-de-sac, and when they can be reached without inviting further infection, an aspirating needle will, in some cases, clear up and aid in the diagnosis.

In many cases the concomitant rational symptoms afford valuable aid in reaching conclusions. Pain may or may not be an important symptom. In acute cases it is more valuable than in subacute or chronic cases, except where pressure on some nerve filament acts mechanically on the production of pain. The question of bodily temperature, particularly the evening tempera-

ture, is of much clinical importance. Its study may illuminate the whole problem, and yet it must not be mistaken for a chronic inflammatory process, of which it is often an important factor. This symptom of fever may be altogether wanting in old, encysted abscesses, in which nature has erected sufficient barriers to modify or preclude temperature changes ordinarily induced by ptomaïn absorption.

Again, cases of chronic, malignant, or tubercular deposits may serve as a rational explanation of fever, independent of pus accumulations. In either case, examination of the findings may clear up existing doubt. Special care must be exercised, in examination about pus-tubes and appendicial disease, in giving each condition due weight. In fact, disease resulting in inflammation of, and contiguous to, the appendix forms a very important chapter in infectious diseases of the pelvis. The abscesses which follow along lymphatic courses are, oftentimes, small in size and defy efforts at differentiation without abdominal section. These are more common in salpingitis and endometritis arising from a variety of septic infections. Other things being equal, the small abscesses are more difficult of recognition than the large, and correspondingly more difficult of treatment.

No surgeon has yet ventured to assume that absolute diagnosis can be made as to these pelvic conditions, and when grave symptoms remain which are not open to certain differentiation, recourse may be had to exploratory section to clear up the diagnosis.

Interference. The rule that pus in the pelvic cavity must be evacuated is general, though not universal. The technique of such procedure can in this discussion only be touched upon, on account of the limitations of time. The manner and route of evacuation is of the highest importance. The anatomical relations of these abscesses demand the most careful scrutiny, as they bear a very important relation to the method to be adopted. It must, however, be remembered in this connection that the same causes which add to the difficulty of making a correct diagnosis may operate to our embarrassment in the matter of treatment. One such cause is that of intrapelvic adhesions, a topic I had the honor of discussing at our last meeting. It may render our efforts unavailing to a greater or less degree, and its bearing on the case may not be fully appreciated until the peritoneal opening has been

made. When possible, it is desirable in operating to remove the pus sac. This can usually be done in pus-tubes and ovarian abscesses; when the carriers of pent-up pus are composed of exudations more or less organized, such procedure may be impractical, particularly when acute in character and of recent formation. It is needful after removal of the sac to close in, as far as possible, all raw surfaces by fine catgut; then drainage is to be resorted to, and the direction in which it is to be accomplished will be considered with due diligence. Other things being equal, when removal of the sac is impracticable, drain from the most dependent portion, and, if possible, drain downward. Let gravity aid in the evacuation. By it, results before unexpected have been accomplished.

These suggestions open up the practical and vital question as to whether drainage should be downward through the vagina or upward over the pelvic brim. Each has its advantages, each its limitations. The pathologic processes already present will aid in elucidating the problem. When pyosalpinx or tubo-ovarian abscess has to be dealt with it is usually best to operate from above. The reasons for this need not be discussed at length, but it is said, *en passant*, primarily for the reason that operation from above not only gives a fair field for the operator to work intelligently and with added certainty in the successive steps of the operation, but thereby to avoid the chances of new infection—a very important consideration. There are cases—not a few—in which abscesses of whatever nature they are, when fluctuation can be detected through and in close proximity to the vagina, in which the operation should be done this way. Not infrequently the grave risk of new infection may be obviated by such procedure. These apply as well to abscesses formed in Douglas's cul-de-sac and those forming in the broad ligament, resulting from softening hematomata due to ectopic ruptures or other accidental causes. Such pus accumulations can be evacuated through the vagina, the cavity irrigated and curetted if required, and packed with gauze.

If there is but a single abscess its obliteration can usually be accomplished in this manner. The material for drainage under conditions like this is of less importance than the drainage itself. Plain or iodoform gauze answers well, removing it from time to time and repacking the cavity as it diminishes in size.

There is a class of cases in which through-and-through drainage best meets the ends in view. The through-and-through drainage may extend through the abdominal wall, through the mass into the vagina, and sometimes through the abdominal wall out through either flank. Large phlegmons of the broad ligament filling to a greater or less extent the pelvic cavity, rising as high or higher than the pelvic brim, fall within this category. Sometimes it happens the drainage passes through considerable distances of structure. When this is the case it is always desirable to keep open longest that orifice which will best facilitate drainage. In such cases perforated rubber tubes may best fulfil the indications. Whether these or gauzes are used new material can be introduced from time to time, by fastening the new drainage with nice adaptation to the old, and as the old is removed draw in place the new. This same drainage makes through-and-through irrigation possible, which is frequently of manifest value in hastening recovery.

The question may be asked what germicide should be used with the irrigating solution. Ordinarily I prefer sterile salt solution, but in some cases peroxide of hydrogen is of great use. I confess to partiality for a little pulverized iodoform being added to the irrigative once in two or three days in tedious cases. While it is not regarded as a germicide, it has, bacteriologists tell us, a marked inhibitive influence over such development, and to judge from the clinical stand-point it certainly hastens the healing process, as more or less of it will adhere to the walls of the abscess cavity. Its use is so well established that it has passed the experimental stage and is likely to maintain its place for some time to come. The treatment of diffused septic peritonitis, whether due to the streptococcus, staphylococcus, or some other form of infection, should have passing notice. If any thorough irrigation is permissible it is under conditions like these. From Fowler's experiments it appears that an elevation of the trunk, so as to give an incline of the peritoneal cavity downward, facilitates drainage and adds to the chances of recovery. Further observation along this line will be watched with interest.

The use of appropriate internal remedies must not be neglected. Supporting measures, particularly tonic doses of quinine and strychnine with full alcoholic stimulation, associated with thorough nutrition, must be employed. Serum therapy, while disappointing,

may have its uses in septic conditions. Credé's ointment has demonstrated its value under very unfavorable circumstances. The hygienic surroundings are of such imperative necessity as to require the most careful consideration. Hyperpyrexia must be combated principally by abstraction of bodily heat as seems best adapted to the especial case. Multiple abscesses anywhere within the pelvic cavity, from whatever cause, are particularly difficult of management. No matter how many are found and evacuated, and the more numerous the graver the complication, the doubt is likely to remain whether all have been discovered and cared for, and the results clouded with the same uncertainty.

There are limitations to the number which can be drained through any one peritoneal opening, be it upward through the abdominal wall or through the vagina, and these very limitations defeat the purpose to be accomplished.

Special care must be exercised in the use of the gauze when the drainage comes from the depth of the pelvic cavity or at comparatively remote distance from the abdominal incision, otherwise the safety of the patient may be jeopardized by the gauze being entangled in the intestines or mesentery. This, in a large degree, may be obviated by the use of the Mikulicz drain. The arrangement of the gauze within the bag is vital to the result. It may be filled to the extent of its capacity from bottom to top, with narrow packing gauze, plain or mixed with iodoform, as I often prefer; or the gauze may be introduced into the bag in such a manner that a portion of it may be removed from the top to the bottom, without disturbing what remains. In this manner new gauze may be introduced or a portion allowed to remain as long as desired.

There is one class of cases to the management of which I have not yet referred, namely, that of discharge of pus into the peritoneal cavity. It is among the most serious accidents which can complicate a condition already serious. Like perforations in typhoid and other conditions, if anything is to be done for the patient there can be no delay. Prompt action gives the only hope and may save the patient, and, unless the condition of the patient absolutely forbids, abdominal section should be tried. These very largely represent a class of emergency cases which are not seen until the condition is acute. Sentiment should find no place under such

circumstances, but duty alone as appears from a rigid interrogation of the case, backed by sound judgment, can alone decide. The clamor of friends, the love of statistics, are considerations to be entirely ignored. In fact, the same rule applies to all these cases before such stress of circumstances has appeared. There is a side consideration which adds embarrassment to the operator, but in no way should it influence his action. It is the failure of the public, and, sometimes, I fear, the profession, to discriminate as to the cause of fatality in many of these cases.

They decide that the patient perished as a result of the operation—*ergo*, it should not have been done—when in many cases the operation had nothing to do with the cause of mortality. Another outcome of these cases is found when pus cavities empty themselves into the urinary bladder or some portion of the alimentary canal. They may be neglected cases which should have had earlier operative interference, or they may be inoperable. Certainly they are far less serious than when the accumulated fluid finds its way into the peritoneal cavity. They may or may not end satisfactorily. They represent only one class of anomalous cases. Others occur where the pent-up pus finds its exit from the pelvis alongside the rectum, or follows the course of the psoas muscles, or through the abdominal wall. The cases herewith mentioned are of the former class, and the results in two cases are satisfactory and in the other fairly good. They bring about unexpectedly good results.

CASE I.—Miss T., aged forty-four years, was sent to my service at the Bushwick Hospital by my distinguished friend, the late Dr. Skene. She gave a history of having suffered with an abdominal tumor for fifteen years, gradually increasing in size, until it reached midway between the pubes and the ensiform cartilage. It was a fibroma and fitted into the pelvic cavity as one mold would fit into another, and was absolutely immovable by adhesions from being lifted upward, though the upper portion could be moved laterally to a limited extent. She also gave a history of several attacks of acute peritonitis during intervals of a few years. She had during this period been under the care of a half-dozen of the most eminent gynecologists in New York City, and had been advised by one or two men of note to have it removed. At the time of her entrance to the hospital she had a temperature of

101.5°, which gradually rose with each successive day, and an occasional chill, and complained of great pressure and some rectal tenesmus. I declined absolutely to interfere surgically. It was impossible to explore the posterior portion of the pelvic cavity, either by rectum, or vagina, or from above, for the reasons already stated. Relief came by copious discharge of offensive pus by rectum. There was no change in the size of the fibroid to be detected by careful examination. There was a partial filling of the abscess with another discharge, after which there was no return of suppuration, and the subsequent history of the case clearly indicated that the abscess formed behind the tumor and was inaccessible and inoperable. She was in my office September 2, 1900. She manifested symptoms of the menopause, and the tumor had shrunken one-third in size. This is a case in which operation at no time gave chances of favorable outcome.

CASE II.—Miss B., aged thirteen years, entered my service in the Brooklyn Hospital three years ago at the suggestion of her physician, Dr. Frederick A. Cook, surgeon of the recent Antarctic expedition. She had never menstruated, but her development showed approaching puberty. She had been confined to her bed several weeks before being seen by Dr. Cook or myself, with symptoms of pelvic peritonitis, and undoubted evidence was present that a pelvic abscess had ruptured into the urinary bladder prior to her admission. The uterus was fixed and the large mass present filled the left half of the pelvic cavity to a level slightly above the pelvic brim. Over this hard, unyielding mass, doubtless an organized exudate, were signs of an abscess pointing upward through the integument, a little to the left of the median line and in close proximity to the bladder. She was placed under an anesthetic and an exploratory incision made. The parietal and abdominal walls of the peritoneum were closely adherent, and an abscess containing two ounces of pus was evacuated. No sinus could be found leading to another abscess or the bladder. The pus in the urine gradually diminished and finally ceased, but there is a sinus yet remaining, two inches in depth, at the point of the abdominal incision, that continues to discharge at the time of this writing, September 1, 1900, about two drachms of pus daily. She has developed into a well-proportioned woman, but owing to timidity has so far declined any further surgical interference.

September 13th. Her physician, Dr. Cook, informs me this evening that ten days ago the sinus closed externally, since when the abscess cavity has again discharged itself into the bladder and pus is found with the urine. She states that after the sinus closed she felt a peculiar sensation in the pelvis, as though something had broken loose.

CASE III.—Mrs. O., French, aged thirty-three years, was operated on by me at the Bushwick Hospital, January 2, 1898, for ruptured ectopic tube at ten weeks. The peritoneal cavity was distended with blood, and owing to hemorrhage and violent shock she was saved only by intravenous transfusion of twenty-four ounces of salt solution. Her recovery was prompt, and at the end of three weeks she was convalescent and desired to return home. I declined to allow her to go, as more time should elapse before she left the hospital. A day or two subsequent she began to complain of pain in the left part of the pelvis, accompanied by fever, and a large phlegmon developed in the left broad ligament, displacing the uterus to the right, filling two-thirds of the pelvic cavity, and reaching nearly to the umbilicus.

I could detect no fluctuation, but believing pus was present I inserted a needle into the mass through the vagina, finding an abscess. I then inserted a pair of scissors three inches into the abscess cavity, evacuated, and packed with gauze. No other abscess could be found, but another developed in the same region and discharged itself into the bowels. After this the inflammatory exudate was reabsorbed, the uterus regained its normal position, and she made a slow but satisfactory recovery. The interesting fact connected with this case was the nature of the infection. A culture was made of the pus evacuated, which showed large numbers of the bacillus coli communis, demonstrating that the infection was not due to the earlier operation, as the ruptured tube was on the right side. Doubtless there was some denudation of the mucous lining of the colon, near the sigmoid flexure, and the bacillus escaped from the alimentary canal by penetrating the structures contiguous.

This case illustrates a favorable outcome due largely to nature's unaided efforts. This patient presented herself at my office September 11, 1900, in good health, desiring treatment for sterility. Unfortunately there is another aspect to these cases; not all are so

fortunate. Statistics throw no light on the melancholy fate of those who perish from septic infection, either by absorption by the lymphatics, or rupture of abscesses into the peritoneal cavity. In how many of these myriad cases correct diagnosis was made there is no way of knowing, and what proportion of these might have been saved by timely interference is a secret which will never be known.

TREATMENT OF CHOLELITHIASIS.

By HERMAN E. HAYD, M.D.,
BUFFALO.

Diseases of the gall-bladder and ducts of the liver have become matters of very great importance, and their prevention and successful management are every-day experiences. The surgery of the liver and gall-bladder followed as a natural result upon the advances made by reason of the results and the perfected technique of the surgery of the pelvic organs, and today in every city in our land, operations have been successfully performed by many of the local surgeons for diseases of this important viscus. The debt the surgeon owes to Lawson Tait can never be paid, and the results of his bold but wonderful surgical acumen, suffering humanity must always acknowledge with grateful reverence.

The pathology of cholelithiasis is pretty well understood, since we have been able to demonstrate what an important part the bacteria which inhabit the bowel have on this condition. The older pathologists did not provide us with the cause, but merely with the conditions which favored the development of these various organisms. For instance, it was assumed by them that stagnation of bile due to tight-lacing, intra-abdominal tumors, pregnancy, lack of exercise, old age, and the ingestion of large amounts of carbohydrates were responsible for a slowing of the bile current, and hence the precipitation of the cholesterin and bile salts and pigments.

We have, however, gone a step further, and have shown that the slowing of the bile currents favors the development of the vicious organisms which gain entrance into the gall-bladder along the common bile-duct from the intestinal canal, and that the gall-stone is the product of the disintegration of the epithelial covering of the gall-bladder and its ducts, together with an increased production of cholesterin, due to and induced by this catarrhal process.

The composition of a gallstone differs in a measure with the locality in which it is found, those of the ducts being made up largely of bilirubin calcium, while those of the gall-bladder have as their nucleus the bilirubin calcium salt, with concentric layers of cholesterin around it; often in the center of one of these concretions the typhoid bacillus or the bacilli coli communis or the other organisms which infest the bowel are found; and it is assumed that these germs must gain entrance either through the common duct into the gall-bladder or are carried there with the general blood current. Sometimes one of the most important etiologic factors is a duodenal catarrh, which causes a slowing or stagnation of the bile current. Various experiments have been made showing that micro-organisms can be injected with impunity into the gall-bladder without producing any ill results, providing the exit of the bile is in no way interfered with; but if the common duct be tied or obstructed, immediately an intense cholelithiasis results, with the rapid deposition of cholesterin.

Many gall-bladders contain gallstones, and their existence has not been noted during life, nor did the economy suffer appreciably by reason of their presence. It has been argued by some that the swarthy complexion of certain individuals, with their histories of repeated bilious attacks and intestinal indigestion, are but expressions of cholelithiasis. This is often true, but such indefinite symptoms are not sufficient to establish a diagnosis; but if we add to these a distended and painful gall-bladder, with or without previous attacks of jaundice, then the question for operative interference becomes a very serious one indeed.

Old age is peculiarly liable to gallstones, but their presence is tolerated often without any definite symptomatology. The slowing of the bile current and the imperfect muscular power of the gall channels and the natural tendency to catarrh and associated constipation are reasonable explanations for their frequency. They are also tolerated sometimes with little discomfort, and no doubt this is due to the lessened reflex irritability of the terminal nerve fibres and the weakened and less sensitive musculature of the bile radicals.

Cancer is a very common malady in the aged, and is often seen in conjunction with impacted gallstones. It is reasonable to assume that it is induced by their irritating presence. Moreover,

in many of these cases there is no history of biliary colic, and the presumption is that a stone becomes wedged in the duct and simply keeps up an irritation, but does not provoke any definite colic. Stones pass very easily through the common duct in old people, and during their progress cause no pain, as the conduit relaxes so easily that they were not suspected until found in the stool. However, it must not be understood that stones do not cause active symptoms in old people, because very frequently the most severe colic and even collapse results from their passage or imprisonment.

Jaundice is not always seen even in cases of marked cholelithiasis, because the common duct may not be thoroughly obstructed, and even when a stone becomes impacted in this main bile conduit sometimes sufficient space exists to permit the outflow of bile into the duodenum, owing to a peculiar ball-valve action, the stone flowing back and permitting the bile to work out into the bowel. Jaundice is usually to be expected when the impaction is in the common and hepatic ducts, but not if the cystic duct is the seat of trouble, because the bile can escape from the liver into the intestines. Sometimes, however, the cystic duct becomes so distended with fluid that it presses upon the common bile-duct from without, and thus obstructs the bile flow and jaundice results. Occasionally a stone becomes impacted in the ampulla of Vater—which is simply a distended portion of the common bile-duct after its junction with the pancreatic duct, at the orifice of the duodenum. Pain and febrile disturbance, often of a peculiar remittent or intermittent character, results. Chills are seen and malaria is suspected. This fever is no doubt due to the toxins which are formed at the site of impaction and are absorbed through the eroded and abraded mucous membrane.

The treatment of cholelithiasis naturally divides itself into:

1. The prevention of the cholelithic condition.
2. To the relief of an attack of gallstone colic.
3. To the emptying of the gall-bladder and ducts of their stones.

The first is met by encouraging exercise and an outdoor, active life, moderation in food and alcoholic drinks, massage and hot baths, daily and free bowel movements, the lessening of any constriction of the chest and abdominal viscera by corsets or tight waists or belts, etc. It is also stated on good authority that the

very free use of starches and non-nitrogenous foods encourages the tendency to the formation of gallstones by lessening the amount of bile acids in the bile, and for that reason a meat diet has been suggested. During an attack of colic the pain must be met by hypodermic injections of morphine or even inhalations of chloroform; the application of a large hot poultice of linseed meal to the abdomen over the liver area; a prolonged hot bath, which sometimes relaxes the muscular and nervous system to such an extent as to favor the exit of the stone, and, if shock and collapse be profound, such remedies as would naturally be indicated.

When stones have formed and exist in the gall-bladder or ducts there is no medicine which causes their absorption or liquefaction. It is perhaps true, however, that a course at Carlsbad or the regular use of aperient waters might help their discharge into the bowel: first, by relieving associated congestion and catarrh, and, second, by helping on the bile current. It is in this way that an explanation can be found for the apparent good of the olive oil treatment, because there can be no doubt in my mind that relief has come from its prolonged administration, not by saponifying or dissolving the stones, but by antagonizing and soothing catarrhal processes. So with patients who go to the various spas and springs in Germany, after a few days' sojourn they begin to pass stones, and this fact can be explained only upon the supposition that the onward flow of the bile is stimulated, and the catarrhal ducts are rendered less sensitive and more patulous. However, when the gall-bladder or ducts are the seat of stones which are not being gotten rid of, and are causing much pain and irritation, a surgical operation is indicated, and this is well stated by Waring in the following sentences:

"*a*. The presence of a tumor in the abdomen, which appears to be an abnormally distended and large gall-bladder.

"*b*. The existence of jaundice, which is persistent, together with other signs and symptoms which point to complete obstruction of the common bile-duct or the common hepatic duct.

"*c*. The occurrence of successive paroxysmal attacks of biliary colic, with short intervals between the individual attacks, which are lowering the general health of the patient, inducing a state of general exhaustion, and are not amenable to medical measures.

"*d*. Symptoms of localized inflammation in the region of the

gall-bladder, which are associated with the occurrence of attacks of biliary colic.

"*e.* The occurrence of acute peritonitis, which is probably due to perforation of the gall-bladder or one of the biliary ducts, and escape of calculi and purulent matter into the peritoneal cavity."

In an uncomplicated case the operation is a very simple one and should have practically no mortality. If a suppurative cholelithiasis exists with free adhesions the difficulties increase, and likewise the dangers and complications. Every case, therefore, should be operated upon as early as possible, for the dangers to the patient increase the longer one delays operative interference. When the gall-bladder is healthy an ideal cholecystotomy can be performed —that is, the gall-bladder can be opened and its contents evacuated and the cut edges brought together without drainage. However, this simple toilet cannot often be depended upon, because the bladder wall is usually so infected that drainage for a few days is at least desirable. Then the edges of the gall-bladder must be stitched to the skin of the abdominal incision and the wound drained with gauze or by rubber drainage-tube; in other words, a cholecystostomy is necessary. Beside the feeling of security that drainage gives one, a cholecystostomy, by keeping an opening into the bladder for some days, enables any stone which was overlooked, or even loosely impacted in the common duct, a chance to work out by the copious irrigation which such a wound gets at each dressing. The incision is usually made in the right semilunar line from the costal border downward, as long as may be necessary. If the case be difficult or the stone be lodged in one of the ducts an incision can be made at right angles to the first incision and carried well over, dividing the right rectus muscle along the free margins of the costal cartilages of the ribs. By such an incision and with the assistance of strong retractors one can work satisfactorily not only upon the gall-bladder, but upon the common duct even up to the duodenal orifice.

The gall-bladder may be found filled to distention with bile, or it may contain stones with bile or even purulent products. It may also be empty and be nothing but a fibrous mass, or it may be filled with a light-colored mucus and attain an enormous size when the cystic duct is closed. This mucus is simply the product of the mucous membrane of the gall-bladder and duct.

Many complications result from impacted stones in the ducts and their ulceration into the bowels or even into the peritoneal cavity, and these must be met upon general surgical principles.

I beg to show you an interesting lot of stones, 110 in number, which I removed from a patient bearing the following history:

B. L., aged forty years, live-stock dealer; a strong, well-built man. Ten years ago he suffered an attack of colic, associated with jaundice, which lasted a few days; about six months later he had another attack, and continued to have attacks, only much more frequently, until two years ago, when he was compelled to give up his business as a butcher. For the last six months the pain in his right side has been very great; in fact, frequently he would leave his house and get as far as the stable and would be compelled to return and go to bed, where he would remain for a day or two. Often these attacks would be attended with chills and fever for a few days. He has had no jaundice for the past two years, and his stools have not been lighter than usual. I was called to see the patient in consultation with Dr. Goldberg. I found him in bed, suffering great pain in the right hypochondriac region and excessively tender over the region of the gall-bladder. By gentle percussion the gall-bladder could be mapped out below the margin of the ribs. Temperature 101.5°, pulse 90. Operation was advised, and the patient went at once to the German Deaconess's Hospital. On the following morning the gall-bladder was opened by the ordinary incision along the right semilunar line, and in order to make more room was carried over the median line, dividing the right rectus muscle. The gall-bladder was seen to be much distended and very dark, and had lost its glistening look. There were some adhesions between it and the adjacent structures, which were easily separated. The gall-bladder was freed, and then all around it and under it gauze was carefully packed. Some time was occupied in doing this step of the operation very carefully. The gall-bladder was then opened, and a lot of thick, dark fluid escaped, carrying with it these stones. The smaller ones on the top and the larger ones occupied the cystic end of the bladder and duct. The last one, as large as an olive, was removed from the duct by a pair of forceps. The bladder was then thoroughly irrigated, and its cut edges were sewed to the skin and permanent drainage established by gauze. The upper and lower angles of the

wound were now brought together and the dressings applied. The temperature fell on the following morning and continued so during the convalescence. The outside dressings were changed frequently, and the gauze was removed from the bladder on the seventh day. The bladder was then carefully irrigated and repacked with gauze. The dressings were for days soaked with bile, but gradually the discharge ceased.

The patient made an uninterrupted recovery, and went home in the fourth week. The biliary fistula continued for three months, but finally closed, making a clean scar. The man is now in excellent health and every day attends to his usual business.

A second case, a woman, aged forty-three years, was seen with Dr. Eugene A. Smith, with practically the same history. An operation was performed by him, I assisting, and a number of stones were removed and the whole inner surface of the bladder, which was exfoliating and gangrenous. The bladder was packed with gauze and an uninterrupted convalescence resulted. About six months after the first operation the patient had an acute febrile attack, with pain and tenderness over the gall-bladder. Another operation was performed, a biliary sinus existing, and deep down in the cystic duct a large stone was fished out, which evidently escaped us at the first operation. The biliary fistula which had existed soon closed when this stone was removed, and the patient is now a well and vigorous woman.

PELVIC SUPPURATIONS.

By JOSEPH PRICE, M.D.,
PHILADELPHIA.

About the best excuse I can give for this paper is, that more interest has been manifested at our Association meetings in the discussion of papers on pelvic suppurations than in any other class of papers presented.

In the early history of this work a number of classical discussions, by workers now present, on pathology, natural history, operative methods, ancient and modern, were presented at county, State, and national meetings. Some of us discussed the subject all over the land, never refusing an opportunity when it offered. We travelled, in twos and in fours, great distances to discuss pelvic pathology before intelligent societies. We were greatly pleased at the results of our early efforts to unlearn about all we had been taught, and to aid others as promptly as possible to unlearn all they had been taught and what they were teaching. Again, we were greatly pleased both with our missionary work and with our surgical interference for the relief of suffering and dying women. Our early efforts were simple, direct, complete, and positive, and remained so with many of the operators now present. A few operators throughout the country are practising some of the incomplete procedures. The ancient evacuation method is now very commonly practised. The procedure has nothing to recommend it. The relief afforded is slight and always incomplete. All the evacuation methods are blind procedures. We are quite familiar with the multiple nature of pelvic disease, with the great variety of small growths or accumulations, hard, cystic, or suppurative, we find in the pelvic basin. We also know from long practice how easy and satisfactory the removals are when uncomplicated, and how pleasing the results are when complicated by extensive pathologic adhesions and disorganizations of involved adjacent

viscera. The puncture or evacuation simply consists in the discharge of the fluid contents of something that should be removed. The evacuation complicates removal by an unusual anchorage or fixation; it favors sepsis, shock, and hemorrhage in the repeated operation for removal—conditions rarely experienced in primary operations. I have no doubt all of you have seen patients in your offices and in hospitals, who have had the evacuation operation twice or thrice repeated and now demand a cure.

In the last five years I have seen a large number of patients after the second or third puncture. I have also removed the specimens in a good number of cases. The tinkering and delay have commonly resulted disastrously to their general condition. Large numbers are hanging around Philadelphia now. When they consult me I invariably tell them to go back to their surgeon and ask him to remove the diseased tissues, knowing full well that he is surgically timid and will not remove them.

RESULTS OF OPERATIONS FOR PURIFORM ADNEXA DISEASE OUT OF A TOTAL OF 2263 CELIOTOMIES UP TO 1899 IN VIENNA.

Kind of operation.	No.	Cured.	Died.			
			No.	Per ct.	As direct result of operation.	Mortality, per ct.
ABDOMINAL.						
Unilateral adnexa removal	20	19	1	5.0	1	5.0
Bilateral adnexa removal	286	266	20	6.9	17	5.9
Bilateral *radical* adnexa and uterus extirpation	38	34	4	*10.5*	4	*10.5*
Sum of abdominal adnexa operations	344	319	25	7.2	22	6.0
VAGINAL.						
Unilateral adnexa removal	21	18	3	14.2	3	14.2
Unilateral radical adnexa and uterus	7	7	0	0	0	0
Bilateral adnexa removal	1	1	0	0	0	0
Bilateral *radical* adnexa and uterus	220	214	6	2.7	4	*1.8*
Sum of vaginal adnexa operations	249	240	9	3.6	7	2.8
Sum total of adnexa operations	593	559	34	5.7	29	4.8

Mortality, abdominal adnexa . . . . . 5.9 per cent.
" " radical . . . . . *10.5* "
" vaginal radical . . . . . *1.8* "

Abdominal vs. Vaginal Route in Puriform Disease.—I. *Vienna.* Schauta, Wertheim, and Chrobak have *abandoned* vaginal puncture, but are doing radical vaginal extirpation of *adnexa and*

uterus. For the last three years Vienna mortality in *radical abdominal* work has been 10.5 per cent. For that reason, with improved technique, they have adopted the radical extirpation of adnexa and uterus per vaginam, and in the last 230 operations have had a mortality of 1.8 per cent. Schauta thinks, in view of this *low mortality,* conservative treatment should be abandoned.

II. *Berlin.* Olshausen, Winter, and Rumpf have declared against the *conservative* treatment and confine themselves largely to the *abdominal route.* Dührssen reports 200 conservative vaginal operations, with eight deaths. Martin reports 436, with four deaths; but in these 436 were included many hydrosalpinxes, cystic degenerations, etc., simple adhesions. Dührssen, Martin, and Landau are apostles of conservative vaginal work in Berlin. They call the operation *kolpotomia* (cervix and bladder are separated as for fixation operations; uterine artery ligated on one side of abscess; blunt dissection made into the broad ligament). In *Archiv für Gynäkologie* Dührssen reports seventy-eight cases of pyosalpinx and pyovarium treated by this method; twice *laparatomy* was necessary; one death. Dührssen claims that where *virulent pus germs* are known to be present, conservatism is in place. If pus is sterile a radical operation is preferable. Martin limits kolpotomia to a few cases, doing a radical enucleation, either abdominal or vaginal, in *most* instances. In doing kolpotomia Martin has *twice* injured ureters and once cut a large abdominal blood-vessel. Veit, Landau, Stratz, Siefert, and Gottschalk follow Dührssen, doing puncture in virulent cases.

The clean removal of the pathologic growths or accumulations which we commonly find in the pelvis is easy through the vagina; but that complete repair of a disorganized, involved appendix, of bladder, ureters, small and large bowel, that is an important feature of intrapelvic or abdominal operations, requires a refinement of surgical detail never practised by the vaginal route. The conditions alluded to are never recognized by the vaginal or blind procedure. The most satisfactory explanation I can give for general surgeons who neglect their important work is their hunger and thirst after the pelvic operation. I rejoice that they very commonly adopt the wise procedure,—removal from above. But few practice puncture and drainage. They know from experience that puncture of a suppurating colony of glands, either in the neck or

groin, is unsurgical and bad practice. They also know that surgery for the completion of such imperfect procedures is complicated and tedious. Primarily, the removal of the suppurating glands at any point is an easy procedure, followed by speedy cure. Puncture and repuncture, evacuation and re-evacuation, are methods of operation which have nothing to recommend them in preference to abdominal section. I cannot, therefore, conceive of any practice or procedure more unfortunate, more unjustifiable, than that of timid puncture. With the early history of ovariotomy to guide us, the delay and prolonged tapping, we should not favor or permit similar practices which result in the same or more hopeless conditions. Early in the history of pelvic surgery pelvic suppurations were removed early by students and followers of Mr. Tait with more perfect results than are commonly obtained in other departments of surgery.

Sir Spencer Wells, in his lectures at the College of Surgeons, London, England, says: "So long as the patient is moderately comfortable; so long as she can walk a mile or for half an hour without much inconvenience; so long as she can get up and down stairs; so long as there is no great pressure upon any of the organs of the abdomen or pelvis, and she can breathe pretty well and her heart is not interfered with, such a patient as that may be left to ordinary palliative treatment, with the usual attention to the general health."

On this subject Peaslee enters into a lengthy argument, in which he contends for delay, tapping, etc., giving a variety of reasons too long for quotation, and giving the risk of peritonitis the first place. He admits, however, as the strongest argument against delay, "The assumption that adhesions will be developed if they do not already exist, and those existing will become more extensive and firmer, and thus the danger will be enhanced. As a general rule, therefore, I conclude that when the general health has been impaired, and not until then, the time for ovariotomy has arrived."

The above-quoted unfavorable conditions developing in the natural history of cystoma are thrice more common and desperate in all the forms of suppurative pelvic disease. Many now practising the evacuation methods, early in the history of pelvic surgery, offered strenuous opposition both to the surgery and the pathology of Mr. Tait. Some few have unreservedly accepted his pathology

but not his surgery. At present we have no contraindications for the removal of intrapelvic or intraperitoneal growths. We have but one motive,—the relief of suffering and saving lives.

Immediate section is the rule of practice in the case of acute suppurating and ruptured cysts. Tapping and drainage are not thought of. Time will not permit me to discuss this subject under the numerous headings given in the text-books. The chapters on pelvic inflammations in some of our recent text-books are brief and carefully written. The general practitioner has no excuse for ignorance of this subject.

Formerly we heard much about pelvic cellulitis; now but little is taught or written on this subject. Broad-ligament cellulitis is rarely discussed; it is lymphangitis. Tubal and ovarian suppurations, pyosalpinx, ovarian abscess, gross lesions, not microscopic lesions, are the present foundations for our operations. The more acute forms of gonorrheal salpingitis,—relapsing septic salpingitis,—are the easy, simple forms of pelvic disease that we are every day successfully dealing with. The more virulent forms require reconsideration.

There is a want of consensus of opinion. All forms of acute suppurative peritonitis demand early and energetic measures. The evacuation methods are not complete. The cul-de-sac opening is not sufficient; it is a healthy wound into infected lymph spaces. He who is familiar with the extent of pelvic and general peritoneal suppurations is not satisfied with a cul-de-sac toilet evacuation. Some recent authors lay down the rule "that in most cases it will suffice to open the posterior cul-de-sac, let out the pus, and fill the pelvis with iodoform gauze." They overlook the general filth commonly extending to the loins and filling the anterior cul-de-sac. We very commonly find just as much filth in front of the uterus as behind it. Again, the cul-de-sac operations favor the unfavorable heart and lung symptoms so commonly noticed as following such operations for purulent peritonitis.

By the suprapubic method all muddy fluid, effused lymph, puddles of filth are easily reached and cleansed; all tender lymph planes about the pelvic viscera, before and after the uterus, are easily freed from above and inspected before and after either wet or dry toilets. Generous drains can be placed fore and aft the uterus and in the loins. Freeing of ovaries and tubes, emptying

the pelvis of adherent bowel, freeing the small bowel of all adhesions, wiping all lymph from bowel, removing all lymph from epiploic appendices, drying and draining all infected spaces, are easy from above and impossible from below.

The cul-de-sac operation robs the surgeon of the interest he should have in this very important work. The suprapubic route favors an interest in the most interesting work I have any knowledge of in surgery.

The author of a very good book says: "The ovaries are palpated and loosened from adhesions. The operator makes his investigation of the broadest kind; no false attachment between the organs should be overlooked. Every lymph space should be entered and broken up." His counsel is the best; his method the worst. If he will adopt the suprapubic method he will be greatly pleased with his results. If we arrest infection we save; if we fail to arrest infection we lose. We save by toilet and copious drainage.

Quoting again from the same author: "The operator seeks to open the lymph stream and tubes, so as to cause them to leak. This he would not dare to do had he not provided through his gauze a means of escape for the discharges." Gauze drains are precipitous drains, the only method we have at present of speedily arresting infections. Ten years before hearing of Mikulicz I practised the open treatment both above and below the pubic arch, with splendid results. Formad, the coroner's physician of Philadelphia, was ordered by the coroner to go to a certain house and make a post-mortem on a woman who had had a criminal abortion. He found her still living and referred the patient to me. I found the abdomen greatly distended, patient was vomiting and leaking, and there were all the symptoms of approaching dissolution. I opened the abdomen without scrubbing preparations, and found the abdomen charged with quantities of muddy fluid and lymph, all intrapelvic and abdominal viscera adherent and bridged by lymph. I freed everything, all bowel adhesions, that I might see and cleanse the mesentery on both sides, placed gauze drains in both loins, in both iliac fossæ, fore and aft of the uterus. She recovered beautifully and had but one alarming complication,—a cough due to metastatic lung involvement. Giving her a pillow, turning her on her side, provoked an alarming cough, which sub-

sided in a few days. This operation I have repeated many times by the suprapubic route for all forms of infection I have any knowledge of.

While writing this paper, three days before this meeting, I did an open operation, used all-gauze drains, for a suppurative peritonitis following a criminal abortion. The pelvis and lower portion of the abdomen were full of pus and filth. The operation was done late, some ten days after the abortion. The perforation of the uterus was large. My impression was that it was done with a lima-bean pole. I could easily pass two fingers in the opening. Strongly adherent loops of bowel in and about the opening only partly prevented the escape of the enormous quantity of pus and fluid above through the uterus and vagina.

JAUNDICE FOLLOWING ABDOMINAL SECTION.

By HENRY D. INGRAHAM, M.D.,
BUFFALO.

It is not so much the intention of the writer to offer in this brief essay anything which will enlighten the members of the Association, as it is his hope that he may obtain from some of them an explanation of what has for some time been a mystery to him.

The fact that jaundice follows abdominal section so frequently is, to my mind, proof that the operation in some mysterious way causes this condition. I know of no text-book on gynecology or abdominal surgery that mentions this sequel, nor do I find it mentioned in the TRANSACTIONS of this Association or of the American Gynecological Society. To be sure, it may be mentioned, but I am not aware that it is. Two or three years ago it occurred in my practice more frequently than at present. For a time 8 per cent. or more of my cases of abdominal section were followed, in from two to four months, by quite severe attacks of jaundice. Not only has it occurred in cases that I have operated upon, but I have seen it in patients of other operators, although I am unable to state the percentage in their cases.

Jaundice may follow abdominal section regardless of the condition for which the operation was done. It has occurred after the removal of one tube or ovary, both tubes or ovaries, an ovarian cyst, complete hysterectomy for fibroids, uterine cancer, and after appendectomy. It has developed after the most severe, complicated, and prolonged operations, or after those of the easiest and simplest character; after a lengthy and tedious convalescence, or after a recovery in which the symptoms were so mild and the disturbance so slight that the patient could hardly realize the necessity of remaining in bed. It has occurred after the use of every kind of suture material, but more frequently, in my practice, after the

use of silk for ligating the pedicle. Very often it has appeared when there was suppuration and the formation of a sinus due to the infection of the pedicle ligature. It has not always occurred when a sinus existed, neither have all the cases followed the use of the silk ligature, but it has been at least twice as frequent after the use of silk as it has after using catgut. Neither the difficulty of the operation nor the kind of suture or ligature material used, has appeared to affect the severity of the attack or to influence in any manner the course of the disease.

Allow me to mention three of my cases, they being typical of the others.

CASE I.—Mrs. A., aged thirty-six years; born in the United States; large, muscular, well-developed woman; married fourteen years; three children, oldest twelve years, youngest six years; labors normal. Always in good health until three years ago, when she began to complain of pelvic symptoms, and upon examination she was thought to have pus-tubes on both sides. An operation was performed a few days later, when the diagnosis was found to be correct. The adhesions of the distended tubes to the adjacent viscera were quite extensive and firm, but fortunately were broken without rupturing the tubes. Silk was used to tie the pedicles and the abdomen was closed with silkworm-gut, each suture including the whole thickness of the abdominal wall. Patient's recovery was uneventful, and she left the hospital in three weeks after the operation, feeling well. A short time after leaving a small abscess appeared, and I concluded that the silk around one of the pedicles had become infected. A sinus formed and continued to discharge a little pus for about two months, when one day I saw the end of a thread, and upon removing it found that it was the ligature around one of the pedicles. The sinus soon healed, but about two months later she had an attack of jaundice, with the usual symptoms of this condition well marked. It was nearly six weeks before the yellow discoloration had entirely disappeared. Since then she has been in perfect health, now eight months. She had never before had jaundice or any other disease of the liver.

CASE II.—Mrs. L., aged forty-four years; born in the United States; married twenty-three years; one child, twenty-two years old; no miscarriages. Had suffered from pelvic symptoms several

years, and about fourteen months before I had removed the tubes and ovaries. Operation not difficult, recovery normal, and patient felt well for the following six months, when she began to complain of severe pain in the left iliac region, with tenderness over the uterus. She wished her uterus removed, and on August 10, 1899, I did an abdominal hysterectomy. The uterus was somewhat larger than normal and had not atrophied since the removal of the tubes. On the left side, where she had the pain, there were quite extensive and firm adhesions of the large intestine to the stump of the broad ligament. The adhesions were separated with considerable difficulty, but without injury to the bowel. In this case catgut was used throughout, except one silkworm-gut to bring the skin together. Recovery was uneventful, and in three and one-half weeks after the operation the patient left the hospital for her home, which was several miles distant. Her health was good until six months later, when she had a well-marked attack of jaundice, with the usual symptoms, including the mental depression. She recovered entirely in about four weeks and has been in perfect health since. In this case there was marked tenderness over the liver, but not much, if any, enlargement. She had never had any hepatic trouble before.

CASE III.—Mrs. B., aged thirty-two years; married at twenty; one child, ten years old; widow eight years. Operation on October 30, 1899. Uterus curetted, perineum and cervix repaired, and both tubes and ovaries removed. Operation comparatively easy. Chromicized catgut used to close cervix and perineum, silk in the abdominal cavity, and through-and-through silkworm-gut sutures to close the abdominal walls.

Recovery was rather more protracted than in the other cases, but for two or three days the temperature was nearly 101° F., probably due to a stitch abscess, which healed in a short time. Patient left the hospital four weeks after the operation, remained at home three weeks, and then, contrary to my advice, went back to her former situation, that of cook in a large private family. She continued in good health for three months, when I was called to see her and found well-defined jaundice, with distinct tenderness over the liver and some enlargement of this organ. This was the most severe and pronounced case of the three in every respect, and especially in the mental depression. It was nearly eight weeks

before the patient recovered, but since then she has had excellent health and has worked hard all summer.

I might enumerate other cases, but I think the foregoing are sufficient. What causes the condition I cannot positively say. I can only surmise. If jaundice occurred only in my own cases it might be thought that my asepsis and technique were at fault. I am as careful in these respects as I possibly can be, and this sequel occurs in the practice of other operators perhaps as frequently as it does in mine. I certainly was as careful and took as much pains with the three cases mentioned as with any in which jaundice did not follow the operation. If the condition were due to sepsis, why should it not occur earlier, and why should there not be other septic symptoms? As no case of postoperative jaundice has terminated fatally there has been no opportunity to investigate the cause by an autopsy.

In some of the cases in which silk was used no sinus formed, and there was no indication of the slightest sepsis whatever, while in some of those where a sinus had formed it had been healed for some time before the appearance of the jaundice. Neither did jaundice follow in all cases where there had been a sinus. Perhaps it would be well to state in parentheses that the silk was sterilized by boiling just before operation and the catgut by formalin.

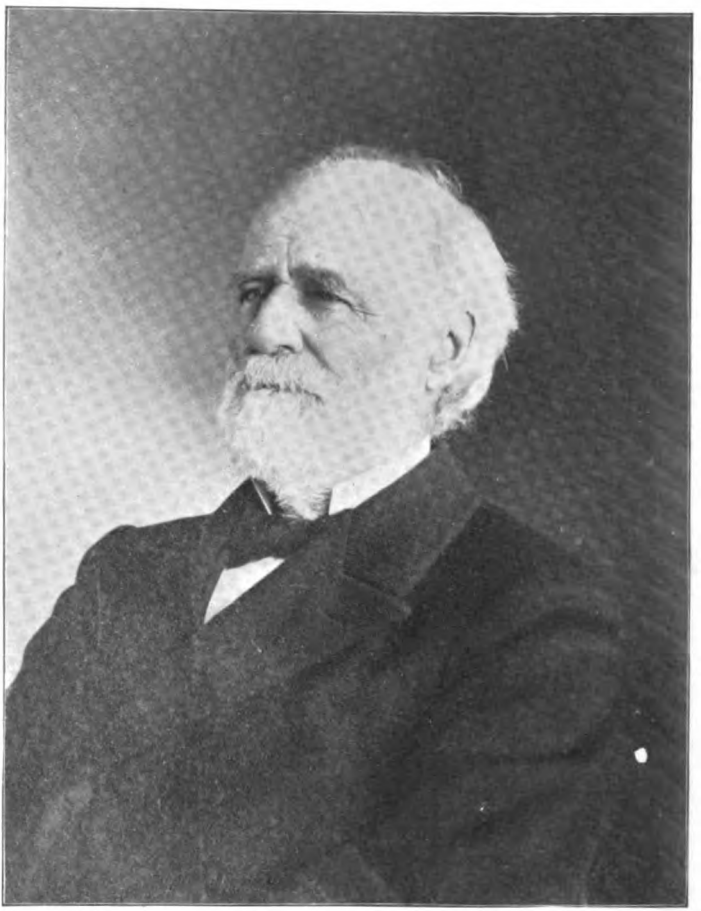
Be as careful as we may, there is no doubt that we carry into the abdominal cavity, in all cases of section, more or less foreign matter that is not absolutely sterile. If we introduce much and the patient's resistance be slight she dies in a few days; but if there be but little and the resistance greater, then may it not be that the little blood-clots, the injured or detached particles of fat or mesentery, or the exudate thrown out around the ligatures or sutures within the abdomen—especially the two latter—in time become infected and break down, and that this débris is carried through the circulation into the liver and causes the jaundice? Sometimes this condition manifests itself in a few days, but it is usually three to four months in developing—surely a long time for the incubation of a septic process.

Yet, if this be the true explanation, there are many cases in which we would expect jaundice to occur that it does not, the operation not having been as cleanly or the abdomen made as free from clots and débris as we could wish, owing to the diseased condition

of the parts; while in other cases where the operation has been more cleanly, and apparently no foreign matter has been left in the abdominal cavity, jaundice does not occur. Perhaps in one case the resistance of the patient is much greater than in the other.

If the theory advanced—that of septic infection—be not correct, pray what is the explanation?

Mr. President and Fellows, I leave the question with you to decide whether or not the view presented be the true explanation. I believe it is, yet I am willing to accept any other explanation that is more plausible.



MELANCTHON STORRS, M.D.

IN MEMORIAM.

MELANCTHON STORRS, M.D.

OBIT., JUNE 9, 1900.

COMPILED AND CONTRIBUTED BY

WILLIAM WARREN POTTER, M.D.,

BUFFALO.

MELANCTHON STORRS, of Hartford, Conn., was born in Westford, in that State, October 2, 1823, and died at his home in the city of Hartford June 9, 1900, aged seventy-six years, seven months, and seventeen days. When a notable physician dies who has practised his profession for nearly fifty years and whose reputation has gone beyond the confines of his city and State, it is an event that deserves more than passing notice, and one that should receive permanent record in the pages of volumes like this, which are intended to preserve the scientific work done at the meetings together with biographical sketches of the members who lay down life's burden and seek rest in the realms of the hereafter. Such a man was Dr. Storrs, and this is a brief and very imperfect tribute to his memory.

He was descended from Samuel Storrs, the English ancestor of that name, who was born in England in 1639, came to this country in 1663 and settled in Barnstable, Mass. Near the close of the century Samuel Storrs removed to Mansfield, Conn., he and his son, Samuel, Jr., being among the original proprietors. He was also one of the original nine members of the Mansfield church and was a prominent man of the town. Joseph, a son of Samuel, Jr., was the father of the Rev. William Storrs, a well-known pastor in Ashford. His son, William, Jr., was the father of Dr. Storrs. He was a farmer and furniture maker, who died generally respected at the great age of ninety-two years.

Melancthon Storrs spent his early life until he was twenty-one years of age at the family home, working with his father upon the farm and occasionally teaching school. Upon attaining his majority he began the study of medicine with Dr. F. L. Dickinson, of Willington. After two years he entered Brown University. He entered Yale in 1850 and was graduated in 1853 from the medical department, receiving subsequently the degree of B. A., 1852, from the academic department. He had previously spent a year of study and work in New York City.

Dr. Storrs first located as a physician in Colchester, and had laid the foundation for a successful professional career when the War between the States broke out. He went to the war as surgeon of the Eighth Regiment Connecticut Volunteers, and was soon made brigade surgeon on the staff of General Edward Harland, of Norwich, who commanded the Connecticut brigade. He took an active part in nearly all the great battles with the Army of the Potomac, and was highly regarded by his associates. Near the end of the war he was executive surgeon of the general hospital at Fortress Monroe, a position of much responsibility and trust. He had completed his three years' service in October, 1864, but under a general act of Congress he remained in the field as an acting staff surgeon, United States Volunteers, until July 17, 1865. During nearly four years of service in the army, Dr. Storrs had great opportunity for surgical experience. Regarding his performance of duty at Fortress Monroe, Dr. Ely McClellan, the army surgeon in charge of the United States General Hospital at Fortress Monroe, officially reported that Dr. Storrs was one of the most efficient surgeons ever on duty at the hospital. Dr. Storrs was also during the war on the staffs of Generals Getty and Brooks respectively. During all his service, frequently of a most trying kind, Dr. Storrs was never off duty from sickness.

Upon his return from the war, Dr. Storrs settled in Hartford, where he established a very large practice, which he continued to hold. Dr. Storrs's capacity for work was exceptional, almost phenomenal. Of late years, as his reputation for surgical work increased, his services were frequently required either as operator or in consultation. He had remarkable powers of perception, prompt decision, and strong will power, which, added to great skill in difficult operations, made him one of the first surgeons in his region.

His prominence in the profession and his reputation were recognized

by the organized medical societies in electing him to various positions of honor. In 1891 he was elected president of the Connecticut State Medical Society, before which he delivered an address on "The Health of Our Schools," which attracted much attention and was afterward published by the State as a public school document. A year later Dr. Storrs was president of the Section on Surgery at the centennial meeting of the society and read a paper, considered to be a most valuable contribution to medical literature, on "A Century of Surgical Progress—Its Causative Conditions." At the Ninth International Medical Congress, in 1887, he was one of the vice-presidents of the Surgical Section. He attended the Berlin Congress of 1891 as a delegate and read a paper on "The Neurectomy of the Superior Maxillary Nerve," which was very favorably received and highly commended by many of the German physicians of prominence who attended the Congress.

Dr. Storrs was conspicuously in the front rank of his profession and earned by hard work and skill the position accorded to him. He had been called upon to perform some of the most difficult operations in surgery, and justly gained great renown, judgment, and skill. Among some of his notable operations are the removal of the trifacial nerve and work on the cleft palate. He had also attained much fame from his work in abdominal operations of the major kind. His skill in surgery did not seem to diminish with advancing years, and his capacity for work did not seem to be affected by his age.

Dr. Storrs was a member of the American Medical Association and of the American Association of Gynecologists and Obstetricians, besides the Hartford City and County Associations and many other medical societies and associations.

For over thirty-six years Dr. Storrs was a director and the medical adviser to the Connecticut General Life Insurance Company, in which he was a stockholder. He was a director of the Hartford Hospital and had been for many years on the visiting staff of the hospital. He was chairman of the committee of the State Medical Society which had charge of the Medical Practice Act which was passed by the General Assembly several years ago. This marked a distinct epoch in medical practice in Connecticut.

Dr. Storrs was married November 29, 1853, to Miss Jane D. Adams, the daughter of the Rev. Charles S. Adams, of Westford. She died several years ago. Four children were born to them, three

of whom survive, namely: William Melancthon Storrs, now with the Pratt & Whiting Company; Frank Herbert Storrs, of F. H. Storrs & Co., and Mrs. Gertrude N. Perkins, widow of the Rev. Frederick J. Perkins.

Dr. Storrs also leaves three brothers and two sisters, who are: William Storrs, of Scranton, Pa., Henry C. Storrs, and Joseph W. Storrs, of Hartford, Mrs. Martha Gillette, of Colchester, and Mrs. Harriet M. Brigham, of Hartford. Dr. Storrs was much interested in matters in the Congregational Church, in which he served as an office-bearer for many years. He enjoyed the regard and esteem of many people outside of the medical profession to a marked degree, and was a citizen of distinction in the largest and best sense of the term.

INDEX.

ABDOMINAL section, jaundice following, 323
Abscess, tubo-ovarian, 264
Acute senile endometritis, 253
Address of the president, 3
ASDALE, WILLIAM JAMES, xxiii

BACON, JOSEPH BARNES, xxiii
BAKER, WASHINGTON HOPKINS, xxiii
BALDWIN, JAMES FAIRCHILD, xxiii, 121, 129, 135, 156, 166, 168, 178
BARROW, DAVID, xxiii
BLUME, FREDERICK, xxiii
BONIFIELD, CHARLES LYBRAND, xxiii
BOSHER, LEWIS C., xxiv
BOYD, JAMES PETER, xxiv
BRANHAM, JOSEPH H., xxiv
BROWN, JOHN YOUNG, JR., xxiv

CAMERON, MARKLEY CONNELL, xxiv
CARCINOMA of the cecum, 163
CARSTENS, J. HENRY, xxiv, 28, 31, 57, 112, 114, 135, 145, 182, 209, 216, 217, 218, 228, 240, 269, 285, 290, 291
Cecum, carcinoma of, 163
CHASE, WALTER BENAJAH, xxiv, 299
Cholelithiasis, treatment of, 309
CLARKE, AUGUSTUS PECK, xxiv, 292
COGGESHALL, FREDERIC, 30, 31
Composite teratoma of the ovary, 36
Contraindications to intraperitoneal use of normal salt solution after abdominal section, 219
CROFFORD, THOMAS JEFFERSON, xxv, 60
CUMSTON, CHARLES GREENE, xxv, 27, 39, 40, 58, 61, 79, 105, 146, 163, 217, 285
Curetment of the bladder in the treatment of chronic cystitis of the female, 40
Cystitis, chronic, in the female, treatment of, by curetment of the bladder and instillations of corrosive sublimate, 40

DAVEGA, S. M., xxv
DAVIS, WILLIAM ELIAS B., xxv, 30, 35, 36, 80, 110, 114, 115, 178, 284
DEAVER, JOHN BLAIR, xxvi, 215, 216, 218, 230, 242
Difficult and obscure pus cases in pelvic surgery in women, 299
DORSETT, WALTER BLACKBURN, xxvi
DOUGLAS, RICHARD, xxvi, 77, 116, 186, 205, 223, 287
DUFF, JOHN MILTON, xxvi
DUNN, B. SHERWOOD, xxvi
DUNN, JAMES C., xxvi
DUNNING, LEHMAN HERBERT, xxvi, 175, 234, 239, 253, 262, 266, 268
Dry sterilized catgut, the ligature and value of, 209

EARLE, FRANK BRECKINRIDGE, xxvi
EASTMAN, THOMAS BOOKER, xxvi
Ectopic pregnancy, diagnosis of, before rupture, 121
Education of the laity upon sexual matters: when shall they be taught, and to what extent? 3
Erroneous objections to bilateral inguinal celiotomy and shortening of the round ligaments *via* the dilated internal inguinal rings, and its superior ultimate results in simple and complicated aseptic retroversions of the uterus, 11
Exhibition of pathologic specimens, 161

FERGUSON, ALEXANDER HUGH, xxvii
Fibroids, treatment of, in the non-pregnant uterus, 244
Fibroma of the ovary, 152
FISH, EDMUND FROST, xxvii, 244, 252
FLOYD, W. MCRAE, 81, 187
FREDERICK, CARLTON CASSIUS, xxvii

GALL-BLADDER, surgery of, 88
Gastric ulcer, perforated, 63
GIBBONS, HENRY, JR., xxvii
GILLIAM, DAVID TOD, xxvii, 85, 100, 105, 133, 144, 160, 169, 214, 260, 277, 285, 288, 291
GOLDSPHON, ALBERT, xxvii, 11, 33, 35, 38, 55, 57, 60, 111, 134, 143, 160, 207, 213, 229, 240, 261, 284
GRIFFITH, JEFFERSON DAVIS, xxvii
Growths, postrectal or presacral, 192

HAGGARD, WILLIAM DAVID, JR., xxvii
HALL, RUFUS BARTLETT, xxviii, 1, 31, 57, 58, 116, 165, 168, 170, 180, 215, 272, 286
HAYD, HERMAN EMILIE, xxviii, 309
Hernia or diverticulum of the chorion, 161
HOLMES, JOSUS BILLINGTON SANDERS, xxviii

Hospitals, private, and their management, 171
HOWITT, HENRY, xxviii, 63, 86
HUGHES, GEORGE MAURICE, xxviii
HUMISTON, WILLIAM HENRY, xxviii
HYDE, JOEL W., xxviii

ILL, EDWARD JOSEPH, xxix, 28, 38, 129, 158, 160, 260
In memoriam: Melancthon Storrs, 329
INGRAHAM, HENRY DOWNER, xxix, 323
Instillations of corrosive sublimate in treatment of chronic cystitis in the female, 40
Inverted uterus, 167

JAUNDICE following abdominal section, 323
JAYNE, WALTER ADDISON, xxix
JELKS, JAMES THOMAS, xxix, 59, 102, 130, 174, 215, 216, 261, 265, 268
JENNINGS, CHARLES GODWIN, xxix
JOHNSTON, GEORGE BEN, xxx

KELLY, WEBB J., xxx

LAIDLEY, LEONIDAS HAMLIN, xxx, 131, 152, 161, 169, 183
Laity, education of, upon sexual matters: when shall they be taught, and to what extent? 3
LANGFITT, WILLIAM STERLING, xxx
Ligature, the, and value of dry sterilized catgut, 209
LINVILLE, MONTGOMERY, xxx
LONGYEAR, HOWARD WILLIAMS, xxx
LYONS, JOHN ALEXANDER, xxx

MACDONALD, WILLIS GOSS, xxx
Malignant disease of the pelvic organs, 292
MANTON, WALTER PORTER, xxxi
MAXWELL, THOMAS JEFFERSON, xxxi
MCCANN, THOMAS, xxx
MCMURTRY, LEWIS SAMUEL, xxxi, 103, 105, 235, 271
MILLER, AARON BENJAMIN, xxxi
MORRIS, ROBERT TUTTLE, xxxi
MURPHY, JOHN BENJAMIN, xxxi
MYERS, WILLIAM HERSCHEL, xxxii

NICHOLS, WILLIAM R., xxxii
NOBLE, GEORGE HENRY, xxxii
Normal salt solution, merits of, 219

OBSERVATIONS respecting malignant disease of the pelvic organs, 292
Ovarian cyst complicated by retroperitoneal fibroma, 165

Ovary, composite teratoma of, 36
Ovary, fibroma of, 152

PAINE, JOHN FANNIN YOUNG, xxxii
PANTZER, HUGO O., xxxii
Papilloma of the vulva, 158
Pathologic specimens, exhibition of, 161
PEARSON, WILLIAM LIBBEY, xxxii
PECK, GEORGE SHERMAN, xxxii
Pelvic organs, malignant disease of, 292
Pelvic suppurations, 316
Pelvic surgery in women, pus cases in, 299
Pelvic surgery, simple methods in, 231
Perforated gastric ulcer, notes on four cases of, 63
PFAFF, ORANGE G., xxxii, 167, 168, 169, 170
PORTER, MILES F., xxxii
Postrectal or presacral growths, 192
POTTER, WILLIAM WARREN, xxxiii, 329
Pregnancy, ectopic, diagnosis of, 121
President's address, 3
PRICE, JOSEPH, xxxiii, 171, 188, 206, 218, 227, 229, 230, 237, 251, 316
Private hospitals and their management, 171
Pus cases in pelvic surgery in women, 299

REED, CHARLES ALFRED LEE, xxxiii, 129, 130, 138, 149
RHETT, ROBERT BARNWELL, JR., xxxiii
RICKETTS, EDWIN, xxxiii, 58, 81, 99, 110, 114, 130, 177, 208, 216, 264, 276
ROSENWASSER, MARCUS, xxxiv
ROSS, JAMES FREDERICK WILLIAM, xxxiv, 78, 110, 111, 115, 192
Round ligament ventrosuspension of the uterus, 277
Round ligaments, shortening of, 11

SALT solution, normal, after abdominal section, 219
SELLMAN, WILLIAM ALFRED BELT, xxxiv
Senile endometritis, acute, 253
SEXTON, JOHN CHASE, xxxiv
SEYMOUR, WILLIAM WOTKYNS, xxxiv
Shortening of the round ligaments, 11
SIMPSON, FRANK FARROW, xxxiv, 219, 230
SMITH, CHARLES NORTH, xxxiv
STEELE, DANIEL ATKINSON KING, xxxiv
Storrs, Melancthon, obituary notice of, 329
STOVER, CHARLES, xxxv
Suppurations, pelvic, 316
Surgery of the gall-bladder, 88
Surgery, pelvic, in women, 299

Surgery, pelvic, simple methods in, 231
Surgical treatment of uterine displacements, 138
SWOPE, LORENZO W., xxxv

TAYLOR, HUGH MCGUIRE, xxxv
Teratoma of the ovary, 36
THOMAS, GEORGE GILLETT, xxxv
THOMPSON, FRANK DANIEL, xxxv
TOMPKINS, CHRISTOPHER, xxxv
Tubo-ovarian abscess and how best to deal with it, 264

ULCER, gastric, perforated, 63
Uterine displacements, surgical treatment of, 138
Uterus, inverted, 167
Uterus, ventrosuspension of, 277

VANDER VEER, ALBERT, xxxv, 82, 88, 117, 147, 184, 208, 234, 251, 259, 273
Ventrosuspension of the uterus, 277
Vulva, papilloma of, 158

WALKER, EDWIN, xxxvi, 106, 229
WENNING, WILLIAM HENRY, xxxvi
WERDER, XAVIER OSWALD, xxxvi
WESTMORELAND, WILLIS FOREMAN, xxxvi
WHEATON, CHARLES AUGUSTUS, xxxvi
WHITBECK, JOHN W., xxxvi
WILLIAMS, HENRY T., xxxvi
WRIGHT, ADAM HENRY, xxxvi

ZINKE, ERNST GUSTAV, xxxvi, 131, 157, 270